



**fuse**

The Centre for Translational  
Research in Public Health



# Lost in Knowledge Translation

## *Moving Towards a Clearer Picture?*

Mapping the conceptualisation of knowledge translation,  
transfer and exchange across public health in the North East

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FINAL REPORT



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# Executive Summary

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## Background

Over recent decades the concept of evidence-based practice in health care has become part of the language of practitioners, policymakers and researchers. However, a gap between the production of research evidence and use of this evidence in practice has been identified, leading to repeated calls for solutions which will render the process more effective and efficient. It is increasingly acknowledged that getting evidence into, or out of, policy and practice arenas is not a straightforward or a linear process and to view it as such may be both misleading and overly simplistic. The term knowledge translation (KT) is used to describe the work required to close or bridge this gap and is becoming common vocabulary. However, as a concept KT (and related terms) are not yet clearly defined, nor are there agreed meanings in many areas including public health. While there is a growing body of literature exploring these concepts, using this evidence to inform public health practice, strategy, research and education is often difficult given the diverse range of sources, the worldviews upon which they are based and the need for local 'contextual fit'. This study was commissioned by Fuse to explore how various stakeholder groups (e.g. practitioners, commissioners, academics, researchers, local authority/government) make sense of and experience the concepts and processes of knowledge translation, transfer and exchange.

The study aims were to:

1. Undertake a rapid review of recent literature syntheses pertaining to knowledge translation, exchange and transfer in public health,
2. Explore and articulate (map) stakeholder conceptualisations and interpretations of knowledge translation, exchange and transfer in public health

A rapid review of existing literature syntheses was undertaken, followed by focus groups and interviews with 34 individuals across the North East of England who work in the field of public health. Participants included 15 academics, 14 postgraduate students and early career researchers (working across all 5 North East Universities) and 5 practitioners. Repeated attempts were made to recruit commissioners, those from local authority / government and a greater number of practitioners, however these attempts proved unsuccessful. It is surmised that the lack of success in recruiting from these groups may have been influenced both by the ongoing re-organisation of the NHS and the changes in local government (i.e. the move of public health into local government) and by the terminology used in the research materials (i.e. 'knowledge translation' as a term may be seen as pertaining to academia; see the study findings regarding language). The sample obtained therefore remains a limitation of this study.

## Literature review

The rapid review of recent literature syntheses initially identified 136 papers relating to the subject but, after appraisal, only seven were deemed to fall within the remit of the project – four relating to existing conceptualisations, theories and models; one pertaining to language; and two to additional areas of confusion or concern. The literature demonstrated a shift in focus over time from generating knowledge, to transferring knowledge, to exchanging knowledge, from passive to active/interactive strategies, and from linear to cyclical frameworks. Many models, frameworks, strategies and processes are described in the literature, and multiple terms and definitions used. The review process highlighted difficulties in studying these concepts: the confusion which exists between models, strategies and processes; a lack of consensus; and issues with terminology used.

## Findings from focus groups and interviews: definitions

During data collection participants were asked to both define the core terms and offer real life examples of these concepts in action. When the definitions were mapped and analysed independently of the ‘real’ examples collected some subtle differences in interpretation of the terms and the language used emerged across the stakeholder groups. However, when a combined analysis was undertaken of the articulations of definitions and real examples, the differences became less noticeable and in some cases almost disappeared. This highlights the difficulties encountered in finding appropriate language to articulate meanings and interpretations, and of the differing ‘languages’ at play across disciplines and sectors.

### *Knowledge transfer*

Both sets of analyses consistently indicated a predominant view amongst study participants that knowledge transfer concerns the movement of information from one (conceptual) place to another. Although the direction of movement was generally felt to be one-way, in terms of “applying the results from research into reality”, analysis of the definitions indicated that the practitioners who participated in the study saw movement as being possible in both directions, i.e. also from practitioners to academics.

### *Knowledge exchange*

In both sets of analysis, participants described knowledge exchange as a passive, one-dimensional process involving the exchange of information between individuals or institutions. As such, there was a degree of overlap between key stakeholder understandings of knowledge exchange and knowledge transfer. However, they were more likely to give examples of knowledge exchange taking place within teams, professions or organisations than in the case of knowledge transfer.

### *Knowledge translation*

Analysis solely of the definitions offered indicated that practitioners and students viewed the concept as largely uni-directional from academia to practice. However, the combined analysis (incorporating real examples) clearly indicated that knowledge translation was not seen as passive, one-way or one-dimensional. Instead, it was described as an active, multi-dimensional activity that consists of three overlapping elements: sense-making, transformation and application. It involves a degree of interpretation ranging from bridge-building to “a very literal, almost, translation of the implications of research”. Despite their obvious similarities, there was little overlap between stakeholders’ conceptualisations of knowledge translation and the other two terms.

### *Process issues*

In describing their experiences of knowledge translation, knowledge exchange and knowledge transfer, participants identified a number of barriers, enablers and incentives:

#### *Access to funding*

The availability of research funding was identified as a key incentive to engage in knowledge translation. Participants identified the current economic climate and associated funding cuts as potentially creating the conditions necessary for achieving greater efficiency and quality in research. However, participants noted that the way that academic research is funded and incentivised often encourages competition rather than collaboration, which then creates barriers to knowledge translation/exchange (KT/E).

#### *Targeted messages*

A major challenge for those attempting KT/E was identified as getting the right message to the right people. The ‘right message’ is one which is most relevant and likely to have a positive impact within a given context. Different stakeholder groups struggle to find a common language and it was suggested academics may find it difficult to construct these messages without input from practitioners or community members. There was a further suggestion that a culture of knowledge sharing does not exist in public health practice. One solution proposed involves the co-location of public health practitioners and academics, generally in practice settings, with both parties then able to achieve some insight into respective ‘worlds’ and potentially reach a common understanding.

#### *The nature of the evidence base*

Participants felt that in addition to ensuring the right messages reach the right people, there is a need to ensure these messages are timely and in a format that makes them applicable to ‘real world’ settings. The research evidence base was described as extensive and in a constant state of flux, making it difficult for practitioners to keep up-to-date with new developments. Academics also noted difficulties in handling the volume of evidence.

At the same time, the ‘real world’ is constantly changing and so it is easy for research to become out-of-date. Concerns were raised regarding the lack of a forum to disseminate findings from small-scale pieces of research. The need for academics to publish in academic journals was highlighted as dis-incentivising other forms of dissemination.

### *The wider context*

Many factors which impinge on a ‘knowledge trajectory’ were felt to be outside of the individual’s control. These problems or barriers range from the national policy context to local organisational constraints. In general, there was felt to be little strategic push for knowledge translation and most examples of KT/E could be described as ‘bottom up’ rather than ‘top down’. The ongoing NHS structural reorganisation and changes in local government were also viewed as a significant threat to existing partnerships and relationships that enable KT/E. However, there was a minority view that NHS reorganisation might provide an opportunity to form new partnerships and try new ways of doing things in an effort to enhance efficiency.

## **Roles and responsibilities within KT/E**

Various stakeholders were identified as being involved in KT/E activities and each of these groups has a different role to play in generating, communicating or applying knowledge, with the aim of improving health. Ultimately, KT/E was seen as a shared responsibility.

### *Practitioners*

Practitioners were felt to have a key role in applying evidence to ‘real life’ settings. However, they were unlikely to label this activity KT/E, and instead described themselves as working in collaboration to achieve health improvement. Frustration was expressed at academic work not being translated into practice. In general, academics were perceived as responsible for resolving this situation, but it was acknowledged that services and practitioners have a responsibility to remain flexible and open to changing their practice. Some individuals could be described as KT/E champions, often engaging in these activities informally at an individual level.

### *Students and early career researchers*

In general, students and ECRs did not see themselves as engaging in KT/E, largely because they perceived no push for this from their superiors. Primary concerns were completing a PhD and/or producing academic publications in order to advance in their career. However, they were keen that their research had some impact on policy and practice. On the whole, students appeared to feel their research was too small in scale to be ‘worthy’ of formal KT.

### *Academic public health*

The co-production of knowledge was seen as the ideal. In reality, KT/E is reportedly driven by academics as the ‘producers’ of knowledge, with practitioners and lay people as the

‘consumers’. This results in a situation where the KT/E process is driven by an academic agenda, rather than occurring either collaboratively or organically. There was felt to be a role for over-arching organisations like Fuse in terms of “building some of those bridges” between academia, practice and local communities.

## Language, knowledge and power

A series of broader ‘macro’ themes emerged from an exploration of the specific issue of ‘language’ as identified by participants themselves and the actual language used by participants during data collection. Thus the consideration of context is widened beyond a simple dichotomisation of systems or groups in public health.

### *The concept of knowledge*

Several participants questioned what was actually meant by the term ‘knowledge’. Thus discussions around the terms knowledge translation, exchange and transfer were compounded by a lack of clarity regarding what ‘knowledge’ was being referred to in this context. Some referred to ‘evidence’ or research findings, while others talked about ‘facts’, ‘information’ or just used the word ‘research’. The majority of language used referred implicitly or explicitly to ‘academic’ knowledge and highlighted the continued existence of an underlying discourse which sees KT/E as mainly concerned with the movement of ‘academic knowledge’ into practice. Indeed, practitioner knowledge (experiential, contextual, tacit, personal) was identified to a much lesser extent as the ‘commodity’ to be translated or moved except in relation to KE.

### *The role of language in the process of KT/E*

The issue of ‘language’ emerged strongly across all data collected. In everyday talk, ‘translation’ is used to denote the process of expressing something using words from a different language. Many participants highlighted this understanding by describing a need to ‘interpret or change’ language in order to render it ‘understandable’. Central to this discussion of translation are the assumptions that:

- Different groups within public health speak different languages [and therefore a need exists for the process of translation] and
- The purpose of the translation process is to render ‘understandable’ the concept [or knowledge] which is to be moved.

Thus a common theme emerged which sees language as central to the process of knowledge translation and closely linked to the process of understanding. The need for a ‘different’ and ‘shared’ language which belonged neither to practitioners nor academics was proposed as a way forward. However, neither the feasibility of this suggestion nor the potential problems involved were considered in the discussions. Such a suggestion may



reflect a 'knee-jerk' reaction which does not go beyond the superficial and the limitations of restricted discussion time. However, the power of language in deterring or dissuading people from engaging with whatever knowledge type is being provided was also highlighted and scepticism regarding the reasons behind language use emerged. Thus other underlying issues began to also emerge.

### *The language used to talk about the processes of KT/E*

The terms used to talk about the KT/E processes were often referred to as 'confusing' 'blurred', 'overlapping' and used interchangeably. The term knowledge translation may be used to denote both a process of changing language in order to transfer meaning and the process of putting theories into action, thus heightening confusion. Diverse groups not only use different 'languages' (technical language and jargon), but potentially hold different views of what the terms KT/E mean. In addition, a paradoxical situation may exist with a shared understanding assumed and terms being used without reflection, alongside an occasional acknowledgement of confusion and the need to discuss interpretations. An assumption of shared understanding may mask multiple interpretations, resulting in people talking about subtly different things. Paradoxically, therefore, while some similarities in understanding exist (as identified in the combined analysis of the definitions and real examples), this is contrasted by subtle differences in the ways in which the terms are used, interpreted and talked about (as identified in the analysis of data solely regarding participants' definitions). Thus ironically the terms knowledge translation, transfer and exchange were seen as themselves requiring translation, or at least debate and discussion.

### *Language and power*

During the discussions, language emerged as serving purposes other than the transfer, exchange or translation of ideas or knowledge. Language was seen to 'belong' to different groups and was clearly linked to the notion of different bodies of knowledge that intrinsically embody power potentials. Language was viewed as 'creating a power', thus the act of researching and collating evidence was seen as academics 'giving power' to practitioners. Indeed the terms knowledge translation, transfer and exchange were seen as pertaining to the academic world. However, the language-power relationship was not viewed as simply existing in one direction from academia to practice. Language use was also viewed as 'powerful' in helping groups fight for 'self-preservation'. While perceptions exist regarding the use of language in creating power differentials across groups and serving multiple agendas (including self-preservation and control of knowledge), it is suggested that the relationships and discourses at play are complex and multi-directional.

## Conclusions

Researching knowledge translation, transfer and exchange is complex given the 'fuzziness' of the concepts and the multiple interpretations and conceptualisations which abound. This conclusion is borne out both by the literature review undertaken as part of this study



and results from the empirical data collected. The study identifies a series of issues of relevance including perceived barriers and facilitators, and offers a series of real life examples of KT/E as described by participants. This report maps the conceptualisations expressed and the findings indicate some level of consistency of interpretation of the core concepts held by academics working across public health in the North East. Given the limitations of the sample recruited, we are unable to make such confident statements with regard to other groups such as practitioners or commissioners/policymakers. A key theme to emerge across the data analysed concerns the role of language both within the process of KT/E **and** in talking about the processes and concepts. Ironically, the study indicates that the terms knowledge translation, transfer and exchange are seen as themselves requiring translation, or at least debate and discussion. In addition, perceptions exist regarding the use of language in creating power differentials across groups and serving multiple agendas (including self-preservation and control of knowledge). It is suggested that the relationships and discourses at play are complex and multi-directional, requiring further investigation in order to assist in developing ways of working with and around such discourses.

# Introduction

This report describes a research study funded by Fuse, the Centre for Translational Research in Public Health. The study involved mapping stakeholder understandings and ‘real life’ experiences of knowledge translation, knowledge exchange and knowledge transfer in a public health context.

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## Background to the study

Over recent decades the concept of evidence-based practice in health care has become part of the language of practitioners, policymakers and researchers. In the case of medicine, it is defined as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients” (Sackett et al., 1996). The rise of evidence-based medicine was prompted by factors such as wide variations in clinical practice, poor uptake of therapies of known effectiveness, and persistent use of technologies known to be ineffective (Walshe and Rundall, 2001). Similar patterns have been observed in fields outside clinical medicine, including public health, social care and education, where the findings of research often do not translate into practice. The assumption is that closing the research-practice gap will ultimately lead to more effective and cost-effective policy and practice (Institute of Medicine, 1999). However, estimates suggest that the time delay in securing evidence take-up can be as long as 10 years (if at all) (Cooksey, 2006; Marmot, 2010). Furthermore, in recent years a greater understanding has been developed regarding the factors involved in determining how knowledge and evidence are, or are not, used. It is now recognised that getting evidence into, or indeed out of, policy and practice is not straightforward or a linear process, and to view it as such may be overly simplistic (Gabbay and Le May, 2004; Kitson, 2009; Mitton, 2007; Greenhalgh, 2012).

The Cooksey review (2006) of publicly-funded health research in the UK identified the risk of failing to reap the full economic, health and social benefits of this investment. The report highlighted two key gaps in the utilisation of evidence in systems of care: translating ideas from research into the development of new products and approaches; and putting those products and approaches into practice. This under-utilisation of the evidence base is often described as the gap between “what is known” and “what is done” in practice settings (Davis et al., 2003; Grol, 2000; Grol and Grimshaw, 2003). The term ‘knowledge translation’ (KT) is increasingly being used in public health, medicine and rehabilitation research to describe the work required to close or bridge this gap (Brandt and Pope, 1997; Davis et al., 2003; Glasgow et al., 2003; Jacobson et al., 2003; CIHR, 2004; Tingus et al., 2004). KT is

becoming common vocabulary but as a concept it is not yet clearly defined, nor are there agreed meanings of the term in many areas of health and social care. A key issue regarding KT involves the multiple interpretations, paradigm perspectives and discourses that exist across a range of national and international contexts (Estabrooks et al., 2006). These perspectives range from the linear bench-to-bedside view of KT to a focus on the co-creation of knowledge and the organic complexity of systems (Graham and Tetroe, 2007; Grol and Grimshaw, 2003; Kitson, 2009). As with other growing topic areas and emerging disciplines (such as patient safety and inter-professional education), a multitude of related terms exist and these are often used interchangeably with KT (Graham et al., 2006). Examples include knowledge transfer, knowledge exchange, knowledge mobilisation and knowledge management. While there is a growing body of literature exploring these concepts, using this evidence to inform public health practice, strategy, research and education is often difficult given the diverse range of sources, the worldviews upon which they are based and the need for local 'contextual fit'. Therefore, there is a need to extend the current knowledge base around KT through empirical research.

## Local context

The North East of England is a context ripe for empirical study given the health status of the local population, the changes taking place within public health and the existence of Fuse, the Centre for Translational Research in Public Health. Levels of health and deprivation in the North East are among the worst in the UK. The region has the lowest life expectancy in England, as well as the highest rates of binge drinking, adult smoking and early deaths from cancer (NEPHO, 2011). In comparison with other English regions, the North East has the lowest average household income and among the highest proportions of one-person (30%), workless (24.3%) and lone parent (8.7%) households (ONS, 2011). To understand and tackle these problems, new approaches to knowledge development, translation and implementation are needed. Such approaches require close partnerships between researchers, the public and those responsible for commissioning and delivering public health interventions.

Fuse, which is one of five public health research centres of excellence funded by the UK Clinical Research Collaboration (UKCRC), was set up with the aim of facilitating new approaches to knowledge translation. Fuse is a 'virtual' research centre, with staff and students based at the five North East universities – Durham, Newcastle, Northumbria, Sunderland and Teesside – working in collaboration with a wide range of policy and practice partners relevant to the development and implementation of effective, efficient and equitable public health. Fuse provides an infrastructure to support research, development and implementation work across the region.

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The mission of Fuse (the Centre for Translational Research in Public Health) is to transform health and wellbeing and reduce health inequalities, through the conduct of world-class public health research and its translation into value-for-money policy and practice.

Source: CTRPH 2009-2010 Forward Plan

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The study described here was supported by the Knowledge Exchange Group (KEG) of Fuse. KEG's aim is to create a community of practice around public health in the North East and contribute to the evidence base on how best to ensure that research evidence is shared in a way which will benefit the development of policy and practice. In line with Fuse's aims of pushing forward the boundaries of public health thinking and developing a new paradigm of knowledge translation, we developed an empirical study that would build on existing knowledge to explore how key stakeholder groups make sense of and experience the concept and process of KT. We set out to articulate stakeholder conceptualisations of KT, develop exemplars based upon 'real life' experiences and begin to map knowledge concepts. In addition, the intention was that the study would also allow further development of theoretical understandings of the KT discourses at play within public health, as well as how and if these are context-bound, socially negotiated and co-constructed. The conceptual mapping described in the remainder of this report will act as a context-relevant basis for future initiatives.

# Study Design

The research described here took place in two phases: a rapid review of the existing literature and a phenomenographic study to elicit key stakeholder views and understandings of knowledge translation (KT).

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## Aims and objectives

This study had two main aims, which were as follows:

1. To undertake a rapid review of recent literature syntheses pertaining to knowledge translation, exchange and transfer in public health
2. To explore and articulate (map) stakeholder conceptualisations and interpretations of knowledge translation, exchange and transfer in public health.

More specifically, the objectives of the study involved:

- a) Ascertaining conceptualisations, theories and models of knowledge translation, exchange and transfer from the existing literature in relation to public health
- b) Exploring the types of language used in relation to these terms
- c) Identifying any areas of confusion, crossover or concern
- d) Using the findings of the rapid review as the basis for the focus group topic guide to be used in the empirical element of the study
- e) Comparing and contrasting understandings of the core terms across diverse professional groupings in public health
- f) Developing a matrix of exemplars or vignettes of the conceptualisations of KT.

## Methodology

The study aims and objectives were met using a two-phase methodology. First, a time-limited rapid review of existing evidence syntheses and literature reviews was undertaken, drawing on Government Social Research (GSR) principles (GSR, 2011). This involved a scoping review to determine the range of studies available on the subject of knowledge translation, exchange and/or transfer in public health. Rapid reviews generally use few

search sources and key terms, rather than an extensive search of all variants, and screen using only electronically available abstracts and texts. The databases and search terms used in this study are shown in table 1 below, along with the results of the searches. The findings of the rapid review are described in the following chapter and were also used to inform the second phase of the methodology.

**Table 1: Rapid review search strategies and results**

Database	Search strategy	Notes	Results
CINAHL	(AB "knowledge translation" OR AB "knowledge exchange" OR AB "knowledge transfer") AND AB "public health"	Adding 'review' to the search string reduced the number of references retrieved to 3	27 references
	(TI "knowledge AND TI "public health" or TI "review")		2 references
MedLine	(AB "knowledge translation" OR AB "knowledge exchange" OR AB "knowledge transfer") AND AB "public health"	Adding 'review' to the search string reduced the number of references retrieved to 7	63 references
NORA <sup>1</sup>	knowledge translation exchange transfer public health	First 100 results checked for each search string to identify relevant items (as per inclusion criteria) not retrieved from database searches	3 references
	knowledge translation public health review = 3 refs		3 references
	"knowledge manag*" "review" "healthcare"		2 references
Web of Knowledge	Topic=("knowledge translation") OR Topic=("knowledge exchange") OR Topic=("knowledge transfer") OR Title=("knowledge translation") OR Title=("knowledge exchange") OR Title=("knowledge transfer") Refined by: Topic=("public health") AND Topic=(review)	Time span=2000-2011 Search language= auto Lemmatization= on	37 references incl. 2 duplicates

An empirical concept mapping exercise was undertaken in order to address the second study aim. This involved a phenomenographic approach, which is an empirical research tradition designed to answer questions about thinking and learning (Entwistle, 1997). It is concerned with the relationships that people have with the world around them, in recognition that different people will not experience a given phenomenon or aspect of reality in the same way. In the context of this study, phenomenography has been used to explore and define the different ways in which people experience, interpret, understand, perceive and conceptualise the phenomenon of knowledge translation (KT). Our intention

<sup>1</sup> NORA is an online tool that enables users to simultaneously search the Northumbria University library catalogue, databases of journal articles, news services and selected Internet resources.

was to conduct up to nine focus groups with a range of key stakeholders working in public health across the North East. Structuring of the groups was based around the notion of organisational, academic and practice knowledge contexts (Eraut, 1994; Stewart, 2006). It was therefore anticipated that the focus groups would include representation from each of the following stakeholder groups:

- Organisational context: Directors of public health, local authority managers, commissioners and providers, relevant staff from the Strategic Health Authority
- Academic context: Lecturers, researchers and knowledge ‘managers’ involved in public health and based in academic institutions
- Practice context: Public health specialist registrars, health trainers, other members of the public health workforce such as health improvement practitioners

Details of recruitment to the study sample are given below, followed by an overview of the processes of data collection and analysis.

## Sampling and recruitment

The main mode of recruitment to the study involved invitation letters and study information sheets sent by e-mail to relevant distribution lists held centrally by the Fuse administrator. Separate distribution lists exist for Fuse staff, students and associate members, as well as a universal list comprising anyone who has previously attended a Fuse-led event (more than 400 individuals working in various academic and non-academic settings, as well as service user representatives). The email emphasised that participation in the study was entirely voluntary and participants were invited to ‘opt in’ by reply. The research team contacted all respondents to acknowledge their interest in the study and their details were kept on a database for use in organising the focus groups. A snowball sampling approach was also used, whereby respondents were asked to circulate the email and study information to colleagues who might be interested. One respondent distributed the information to students on the Master of Public Health programme at Northumbria University, which is primarily comprised of public health practitioners and commissioners working in the North East.

Given the breadth of geographical area covered and the range of agencies and sectors involved in Fuse, it was envisaged that enough participants would be recruited using the above strategies. The intention was to conduct up to nine focus groups with between three and ten participants per group, giving a sample size of up to 90 participants. This was felt to be sufficient in order to address the study aims and objectives. A total of 34 participants consented to take part in the study (although 52 individuals responded to the initial invitation) and the main characteristics of the sample are shown in table 2 below. It proved



difficult to recruit from the organisational context of public health policy and commissioning. However, an additional group of 'learners and novices', i.e. PhD students and early career researchers (ECRs), were identified as a separate stakeholder group. Methodological issues including those associated with the sampling and recruitment processes are discussed later in the report.

**Table 2: Overview of the study sample**

Characteristics	Stakeholder group		
	Academics	Students & ECRs	Practitioners
<b>Gender:</b>			
Female	15	12	2
Male	0	2	3
<b>Location:</b>			
Northumberland, Tyne & Wear	9	8	3
County Durham & Tees Valley	6	6	1
Outside the North East	0	0	1
<b>Totals</b>	<b>15</b>	<b>14</b>	<b>5</b>

## Data collection

Focus groups were selected as the main mode of data collection for the second phase of this study. Although with this method of data collection views may change during the discussions and less confident people may be discouraged from participating this approach is particularly suited to obtaining several perspectives on the same topic and enables participants to ask questions of each other, as well as evaluating and re-considering their own understanding of their specific experiences (Tonkiss 2005, Morgan, 1997). An interview topic guide (see Appendix A) was developed from the findings of the rapid review and included prompts aimed at eliciting understandings, conceptions and experiences of KT and other related terms, as well as generating vignettes or exemplars of KT in action. In an effort to aid recruitment and reduce the burden on participants, our intention was to organise the focus groups to coincide where possible with existing events, such as Fuse quarterly research meetings, local authority or NHS training events, team meetings, etc. However, this proved impossible due to the timing of these events and the study timescales. A total of six focus groups were conducted (by AS, SV and EB), with between three and eight participants per group. Some of the focus groups were mixed in terms of participant types; each group discussion took place within a suitable academic venue and lasted for approximately one hour.

Following a period of poor recruitment to the scheduled focus groups, the study protocol was amended to include an alternative data collection method. The option of an individual interview at a mutually convenient time and place (including over the telephone) was made available to respondents who were not able to attend a focus group but still wished

to contribute to the study. A semi-structured interviewing approach was used, based on the focus group topic guide shown at Appendix A. Using this technique, the researcher asks certain questions but is free to alter the sequencing and to probe for more information, thus exploring more dimensions of the phenomenon being studied than would otherwise be possible (Fielding, 1994). A total of five individual interviews were conducted (by EB and SV), two of which took place in person at Northumbria University and three took place over the telephone. Telephone interviews are known to be useful in geographically dispersed populations, such as those working in public health across the North East region, as well as saving time and effort (Robson, 2002).

The focus groups and interviews were audio-recorded and transcribed verbatim, with all identifying information removed. Participants were allocated a unique identifier and the key for the ID codes was available only to the research team, along with the data files which have been kept on a password-protected University server. Sound files will be destroyed approximately three months after production of the final report and transcripts will be kept for three years in line with University policy. All participants gave their written informed consent to take part in the study, to have the discussions audio-recorded and for the (anonymised) information to be used for analysis. The study protocol and all associated documentation received ethical approval from the research ethics panel within the School of Health, Community and Education Studies at Northumbria University. NHS ethics and research governance approval was not required for this mapping study.

## Data analysis

Within a phenomenographic approach, the purpose of data analysis is to identify the limited number of categories believed to be possible for each concept under study (Booth, 1997; Marton, 1986). These categories are discovered by immersion in the data, i.e. the focus group and interview transcripts. The researcher looks for both similarities and differences among the transcripts, develops initial categories that describe different people's experiences of the phenomenon, and then returns to the transcripts in order to populate and refine the categories. The process of modification and data review continues until the categories appear to be consistent with the raw data.

In this study, the analytical process began with the results of the rapid review, which led to the development of initial categories based on themes within the existing literature. These categories were refined during the second phase of the study, during the iterative processes of sampling, data collection and analysis. The purpose was to identify qualitatively distinct categories that describe the ways in which different people experience KT and related concepts. These categories were then used to re-analyse all of the transcripts using a form of thematic framework analysis, which is a comprehensive, systematic approach that allows between- and within-case comparisons (Ritchie and Spencer, 1994). Phenomenographic research results in categories of description of the

various conceptions of a phenomenon (Entwistle, 1997). Each of the categories describing key stakeholder conceptions of knowledge translation, exchange and transfer are presented in the following findings chapters.

# Findings 1: Rapid Review of the Literature

A rapid review of recent literature syntheses pertaining to knowledge translation, knowledge exchange or knowledge transfer was undertaken. This work subsequently informed the design and delivery of the empirical phase of the study.

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## The review process

Searches of four electronic bibliographical databases available from Northumbria University's eLibrary were conducted in October 2011 (see table 1 in the previous chapter). A total of 136 references were downloaded into Endnote bibliographical management software; 32 duplicates were removed by Endnote and a further six by hand. Three items were not available in English and so were excluded from the review due to a lack of resource for translation. Scanning the titles and abstracts of the remaining 95 references revealed 70 items to be out of scope using the following inclusion criteria:

1. Literature review
2. Published since 2005
3. Set in a public health context
4. Referring to theories, models, structures or processes for knowledge translation, knowledge exchange or knowledge transfer

Full text articles were obtained for the 25 remaining references. These were examined and data extracted by one reviewer (DG), resulting in the exclusion of eight items that were deemed to be out of scope (see Appendix B) and 10 further items that contained some relevant information but did not meet the main criterion of being a literature review (see Appendix C). There was no formal quality assessment using an appraisal instrument. The 25 full text articles were rated by study design and publication in an academic peer-reviewed journal, as opposed to as professional journal. Full text and data extraction findings were also assessed by a second reviewer (AS). Key findings from the remaining papers deemed to meet all of the inclusion criteria for this review are presented below.

## Summary of review findings

The purpose of the rapid review was to address the first three objectives of the study (see page 7). Relevant findings arising from the existing literature are set out below using these objectives as sub-headings and with additional detail provided in a series of tables.



### *Conceptualisations, theories or models of knowledge transfer, exchange or translation*

Four articles fully met the inclusion criteria for this study in that they were recent reviews of existing literature examining conceptualisations, theories or models of knowledge transfer, knowledge exchange or knowledge translation. See table 3 for details. Ward *et al.* (2009) detail 28 knowledge translation models in a comprehensive survey. Pentland *et al.* (2011) take a broader approach, identifying agreement about the key characteristics of knowledge translation/exchange across a range of sources. Mitton *et al.* (2007) report that there is little evidence to show what actually works due to limited reporting of KT/E implementation and even more limited evaluation. Kothari *et al.* (2011) draw from the business sector and usefully widen the discussion.

**Table 3: Existing conceptualisations, theories and models of KT**

Reference and country of origin	Notes
Kothari, A., N. Hovanec, et al. (2011). "Lessons from the business sector for successful knowledge management in health care: a systematic review." <u>BMC Health Services Research</u> <b>11</b> (1): 173-173  Canada	Focus is on 'KM' (knowledge management, defined as transfer of explicit and tacit knowledge) not 'KT'. But a lot of KM here is described elsewhere as 'KT strategy'.
Mitton, C., C. E. Adair, et al. (2007). "Knowledge Transfer and Exchange: Review and Synthesis of the Literature." <u>Milbank Quarterly</u> <b>85</b> (4): 729-768  Canada	Identifies alternative search strategy terms: knowledge / evidence/ data . . . generation, knowledge translation, knowledge transfer, knowledge uptake, knowledge exchange, knowledge broker, knowledge mobilisation.  Explains Canadian influence on KT/E.  Identifies five frameworks for applying KT/E strategies, 8 key KT/E strategies, etc in formal systematic review style presentation.  Concludes that little evidence to show what actually works due to limited reporting of KT/E implementation and even more limited evaluation. Notes importance of relationships, institutional knowledge, quality of interactions.
Pentland, D., K. Forsyth, et al. (2011). "Key characteristics of knowledge transfer and exchange in healthcare: integrative literature review." <u>Journal of Advanced Nursing</u> <b>67</b> (7): 1408-1425  UK	Reviews literature re. KT/E in health care; concludes that research into KT/E in health care is limited. Identifies four themes in the literature: 1. Sharing knowledge – key characteristics of KT 2. Generating knowledge – key characteristics of knowledge exchange 3. Applying knowledge – creating optimal conditions for action 4. Knowledge brokering – facilitating knowledge sharing, creation and application.  Literature presented in annotated table. In terms of models, refers to PARiHS (Promoting Action on Research

	<p>Implementation in Health Services) (Kitson, 1998); and CIHR's Knowledge-to-Action (KTA) (Graham, 2006) - both of which are mentioned by Ward.</p> <p>Concludes with areas for development, e.g. creating connections, capacity building, exploration of organisational and interpersonal efforts, active partnering, and creating optimal conditions: "allowing nurses the resources and space to become actively involved in research collaborations and interactive KT activities may appreciably increase their ability to make evidence-based decisions." p. 1421.</p> <p>Notes "there is much agreement about the key characteristics of KT and KE across a range of sources." p. 1421</p>
<p>Ward V, House A, Hamer S (2009). "Developing a framework for transferring knowledge into action: a thematic analysis of the literature" <u>Journal of Health Services Research and Policy</u>, <b>14</b>(3): 156-164</p> <p>UK</p>	<p>Identified 58 different terms to describe the concept of KT.</p> <p>Describes development of a conceptual framework derived from a narrative review of the KT literature that refers to 63 different theories or models across all fields; identifies 28 different models (26 of which featured either distribution type interventions or linkage type interventions) and lists these with references.</p> <p>Identifies five common components of the KT process (problem identification and communication, knowledge/research development and selection, analysis of context; KT activities or interventions; knowledge/research utilisation)</p> <p>Identifies and illustrates three types of KT processes (linear, cyclical or dynamic multidirectional).</p> <p>Resulting framework links the components, and shows they are connected via a complex, multidirectional set of interactions. Empirical work needed to test and refine the model.</p>

The term 'knowledge transfer' was coined in Canada around 2005 and emphasised "models of linkage and exchange" (Landry, 2006). Even this brief survey of the literature demonstrates the change in terminology reflecting the shift in focus from generating knowledge to transferring knowledge to exchanging knowledge, from passive to active/interactive strategies, and from linear to cyclical frameworks. The study by Ward *et al.* (2009) illustrates how older, deterministic, models of KT did not acknowledge the complexity of the process. More recent models present KT as a social process perhaps best demonstrated by the rise of the knowledge brokering role, allowing personalisation and a consideration of what works for whom, in what circumstances, and how. Several authors note that the models remain untested and unrefined, and recent work on framework development in the UK notes the need for testing or case studies of models in action.

### *Language used in relation to knowledge transfer, exchange or translation*

A cross-sectional study of the number and frequency of terms used to refer to knowledge translation in a body of health literature identified over 100 related terms (see table 4 below) (McKibbin et al, 2010). These terms have been made available on a public Wiki called WhatisKT, where 13 key terms have been given a proposed standard definition. The authors suggest that their work provides a starting point for consensus-building on standardising terms and definitions to reduce the number of terms used. In their review, eight terms and their variants were found to be highly discriminating for separating KT and non-KT articles. These relate to five unique terms: implementation, adoption, quality improvement, dissemination and complex intervention. The most consistent use of terms appeared to be in articles dealing with the theoretical basis of KT and KT tools.

**Table 4: Type of language used in relation to KT**

Reference and country of origin	Notes
McKibbin, K. A., Lokker, C., et al. (2010). "A cross-sectional study of the number and frequency of terms used to refer to knowledge translation in a body of health literature in 2006: a Tower of Babel?" <u>Implementation Science</u> , 5,16-27  Canada	Found over 100 terms (and definitions) describing KT research.  More KT terms were associated with KT application articles (n=13) and KT theory articles (n=18).  Terms are available on a public wiki called WhatisKT. Available at <a href="http://whatiskt.wikispaces.com/">http://whatiskt.wikispaces.com/</a>

### *Areas of confusion, crossover or concern*

McAneney *et al.* (2010) compare differences in expectations between academics and non-academics in a network analysis, while Thompson *et al.* (2004) identify five different roles taken on by individuals within knowledge transfer. A summary is shown in table 5 below.

**Table 5: Areas of confusion, crossover or concern**

Reference and country of origin	Notes
McAneney, H., J. F. McCann, et al. (2010). "Translating evidence into practice: a shared priority in public health?" <u>Social Science &amp; Medicine</u> 70(10): 1492-1500.  UK	Network analysis demonstrated by examining the role of the Centre of Excellence for Public Health and its network of internal and external partners in Northern Ireland.  Compares differences in expectations between academic and non-academic network members, e.g. academics more likely to expect the Centre to produce new knowledge, and less likely to expect it to generate health interventions and influence policy.  Academics less strongly oriented to KT as a personal goal than non-academics, though more confident that research findings would be diffused beyond the immediate network.



<p>Thompson, G.N et al (2004). "Clarifying the concepts on knowledge transfer: a literature review." <u>Journal of Advanced Nursing</u>, <b>53</b>(6), 691-701.</p> <p>Canada</p>	<p>A concept analysis of five roles (described as opinion leaders, facilitators, champions, linking agents, change agents) to determine the role they play in KT. Shows differences in roles/bridges.</p> <p>Identifies a gap between researchers and practitioners that is best filled by 'interpersonal contact' to influence behaviour and improve use of knowledge instead of passive dissemination.</p>
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Appendix C details 10 items excluded from the review and usefully illustrates some of the difficulties of studying this new and developing topic; for example, the confusion between models, strategies and processes (Dobbins 2004, 2009a, 2009b); the lack of consensus (Landry, 2006); and issues with terminology used (Straus, 2011).

## Informing phase two of the study

In-depth analysis of those studies identified as examining conceptualisations, theories or models of knowledge transfer, knowledge exchange or knowledge translation was undertaken by all members of the project team (AS, DG, EB and SV). This revealed three core perspectives for considering knowledge translation:

- (i) *Processes*: how KT happens
- (ii) *People*: who is involved
- (iii) *Strategies*: drivers for and barriers to KT

A fourth perspective emerging from this rapid review of the existing literature involved language and issues relating to the ways KT is spoken about and defined. The team also observed that within the literature there is crossover and interchange between these perspectives; for example, one author's description of a strategy may be another author's description of a job role within the KT process. These findings informed the design of the focus group and interview topic guides shown at Appendix A and used in generating the findings set out in the following chapters.

## Findings 2: Definitions and Conceptualisations of Core Terms

Focus group and interview participants provided their individual and collective definitions of the terms knowledge translation, knowledge exchange and knowledge transfer. Each of these core terms is discussed in turn below, illustrated with the use of hypothetical examples and short vignettes.

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### Knowledge transfer

There was a predominant view amongst study participants that knowledge transfer concerns the movement of information from one (conceptual) place to another. For example, university lecturers were described as engaging in knowledge transfer when they impart their knowledge or ‘wisdom’ onto students. The direction of movement was generally felt to be one-way, in terms of “applying the results from research into reality” (Participant Ac1).<sup>2</sup> In other words, knowledge transfer is primarily considered to involve the movement of information from academia to practice or “from Fuse to the outside” (Participants Ac2). This is illustrated by the following quote:

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*So a knowledge transfer example? It could be any research which is done at a University in public health. And how the research can have an input and influence the design of practice. [...] So if I’m having a, or the research I’m doing is having an impact, I suppose, on the people I’m working with, maybe that’s a bit of... We can see the knowledge transfer.*

Quote from Participant Ac1

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This conceptualisation of knowledge transfer is based on the assumption that academics hold the answers to public health problems. One participant stated “there’s a perception that... it’s only academia who can generate knowledge in some way and then transfer it to all those little people out there who don’t have any knowledge” (Participant Ac2). There are connotations of power and hierarchy, in that “Transfer has a top-down feel to it”

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<sup>2</sup> In order to maintain anonymity and confidentiality, the participants are identified by ID numbers only. The letters denote their role: Ac for academics; Pr for practitioners; St for PhD students and early career researchers.

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(Participant Ac13). However, these negative perceptions were less commonly reported by practitioners, students and early career researchers (ECRs). Knowledge transfer was described by practitioners as an ongoing process, rather than a one-off event, involving the transfer of information to and from different stakeholder groups over the duration of a project or programme of work. These stakeholders are seen as experts in their own fields, as illustrated by the following quote:

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*I see all of them [knowledge transfer, exchange and translation] as essentially about the transfer of information from different experts. So, for example, between health academics and community staff and community participants and so on. [...] So that we are able to pass back our experience – and the understanding of the experiences of our clients and volunteers – so we can pass that back to academics to inform future research.*

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Quote from Participant Pr1

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Amongst the student and ECR group, there was some discussion as to whether knowledge transfer could be seen as “a kind of on-the-same-level process” (Participant St12), rather than one involving movement between different levels of a hierarchy. An example might involve sharing information with different academic audiences in the form of research publications or conference presentations. Information is distributed rather than being changed or contextualised in any way during the knowledge transfer process. In some cases this can also involve the physical movement of people as a conduit or vehicle for information. One participant stated that “there’s an awful lot of knowledge transfer which is on the basis of putting graduates or undergraduates into industry... In order to plant, literally plant somebody’s knowledge in that commercial setting” (Participant Ac5).

## Knowledge exchange

Participants in this study described knowledge exchange as a passive, one-dimensional process involving the exchange of information between individuals or institutions. As such, there was a degree of overlap between key stakeholder understandings of knowledge exchange and knowledge transfer. However, they were more likely to give examples of knowledge exchange taking place within teams, professions or organisations than in the case of knowledge transfer. Academic publications were given again as an example of knowledge exchange between those who “speak the same language and are at the same level of knowledge”, making it “easy to progress that knowledge” (Participant St2). In the case of practitioners, this might involve being part of a local public health network in order to “exchange information and find out knowledge from other members of teams in different areas” (Participant Pr3). As well as concerning the movement of information within and between academic and practice settings, another similarity with knowledge transfer is that the information being exchanged does not change during the process:

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*With knowledge exchange it often doesn't... the knowledge doesn't really change much... It's more in a form that makes it readily transportable without actually making any major changes to it, or major modifications to any aspect of it.*

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Quote from Participant Ac3

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A key difference between knowledge transfer and knowledge exchange is that while the former is generally described as occurring in one direction, the latter involves a two-way exchange or sharing of information. As such, knowledge exchange is seen as a more equal and less hierarchical process than knowledge transfer, involving a greater degree of partnership working between different stakeholders. Participants described this as “working with, rather than working on” (Participant Ac7) and “build[ing] the knowledge together” (Participant St1). The process of co-construction results in benefits for both parties or, in other words, “knowledge exchange is when they share something with you, and you share something with them” (Participant St4). This might involve gaining knowledge or some other resource to be used in achieving public health improvement:

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*It's about a two-way process of exchanging knowledge, skills, experience, expertise, evidence, research, understanding, about what works and what makes a difference. [...] And building bridges in a way that accepts that there are knowledge and skills and expertise not just in universities.*

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Quote from Participant Ac14

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The above quote highlights that knowledge exchange, by virtue of being a two-way process, must acknowledge and accommodate knowledge that exists outside academia. This involves information and expertise possessed by public health practitioners but also that existing within local communities. As one participant said, “lay people, they may have some knowledge and information that the academics don't have... [Academics] can base their research on what normal people know and how they do things and how it works” (Participant St11). The exchange process therefore involves different types of knowledge moving in different directions at different stages of a programme of research. The purpose of this activity is reportedly to ensure that the knowledge being generated through research is relevant to the end user so that it might ultimately be used in order to improve health outcomes.

## Knowledge translation

Despite their obvious similarities, there was little overlap between stakeholders' conceptualisations of knowledge translation and the other two terms. Knowledge

translation was not seen as passive, one-way or one-dimensional. Instead, it was described as an active, multi-dimensional activity that consists of three overlapping elements: sense-making, transformation and application. It involves a degree of interpretation ranging from bridge-building to “a very literal, almost, translation of the implications of research” (Participant Ac13), particularly where stakeholders are perceived to be figuratively speaking different languages. An example is given in the quote below and the issue of language is considered further in the final findings chapter. The purpose of this sense-making stage is to reach a level of understanding and consensus between stakeholders, by rendering the knowledge into something that is meaningful and useful to all parties.

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*If I published a paper around mental health – that talked purely around mental health and how teachers are engaging with the mental health agenda – it would be completely meaningless to them... But if I write the same paper that talks about emotional development, emotional wellbeing, they're, “Ooh, yes. That makes sense to us.” It'll still say the same thing.*

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Quote from Participant St4

The second stage involves the generation of new knowledge through the process of translation, so that the products of this process differ in some way from the raw materials. One participant used the analogy of data analysis in research, whereby raw data are synthesised and interpreted in such a way that new understandings are reached. Knowledge translation is seen as moving the research agenda forward, whereas knowledge transfer and exchange can be relatively static activities. Although all three involve the movement of information or knowledge, it is only through the translation process that transformation is achieved. This is illustrated by the following quote:

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*The translation bit, for me, is the fact that in that movement it actually changes in some way. So it's adapted to the new environment. [...] That's my understanding of translation. That when the knowledge moves across boundaries it actually changes in some way to adapt to the new context.*

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Quote from Participant Ac3

The above quote also raises the issues of adaptation. As with knowledge exchange, it was recognised that there exist different types of knowledge but also different knowledge contexts. Participants spoke about the importance of taking these contexts into account during the research process, which involves accounting for variations in the physical and

social environment but also in the needs, perspectives and priorities of research users. One participant said, “It’s all about, oh, telling, telling, doing, telling. But it’s actually an awful lot about listening” (Participant Ac14). The final stage of the knowledge translation process is application, which is described as: “In a nutshell, getting information from whatever source, in such a format that you can then use it, in some way, shape or form, to make a change” (Participant Ac10). It is important to involve practitioners and communities in these conversations, whilst also acknowledging the role of academics in sharing their research expertise and providing the “academic grounding [that] needs to be involved for that then to be called knowledge translation” (Participant Pr2).

This chapter has broadly considered the ways in which stakeholders articulate their understandings of the terms knowledge transfer, knowledge exchange and knowledge translation. The following chapters provide more in-depth accounts of the ways in which these terms are operationalised and influenced by wider contextual factors.

## Findings 3: Process Issues

This chapter contributes to meeting the objective of developing exemplars of the ways in which knowledge translation, exchange and transfer are enacted in reality. A range of barriers and facilitators identified by the participants are also set out.

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### KT/E in action

Participants were asked to describe in detail the processes of knowledge translation, knowledge exchange and knowledge transfer, with reference to specific examples from their own experiences of working in a public health context. Various ‘real life’ examples were given. These have been categorised using the shared definitions shown in the previous chapter and are detailed at Appendix D under the following sub-headings:

- Knowledge transfer
  - Dissemination of research findings
  - Use of online resources
- Knowledge exchange
  - Partnership working between academia and practice
  - Co-location within practice settings
- Knowledge translation
  - Sense-making through collaboration
  - Applying and utilising knowledge

### Barriers, enablers and incentives

In describing their experiences of KT/E, participants identified a number of barriers, enablers and incentives, which are discussed in the following sub-sections. This is followed by a description of the different roles and responsibilities for the various stakeholders involved in these activities.

#### *Access to funding*

The availability of research funding was identified as a key factor in terms of acting as an incentive to engage in knowledge translation. As one participant described it, “the people who hold the purse strings are very often the drivers of whatever is happening” (Participant Ac14). In some cases the requirements of a funder may include an expectation that academics, practitioners and other stakeholders will work together to ensure that research achieves some impact. This is illustrated by the following quote:

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*It's not only a question of how people in public health think. It's also their... The drivers of the people that have funded the research. Because, for example, if you're funded by certain organisations, then it's not funding for you to develop a commercial product or anything. It's funding for you to develop what we've been talking about – a two-way exchange of information to better improve health.*

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Quote from Participant Ac13

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A lack of funding can also act as a driver for this collaborative way of working. Participants identified the current economic climate and associated funding cuts as potentially creating the conditions necessary for achieving greater efficiency and quality in research. The growing emphasis on knowledge translation was described as a “sign of the times” where “if it [research] is not useful to anybody, then nobody is going to fund it” (Participant St3). However, there remain occasions when organisations such as the Department of Health are reported to be “funding for the sake of funding projects” and “pay researchers to carry out a certain amount of research because it looks good” (Participant Ac1). This can negatively influence the perception that practitioners have of academia and make it difficult to achieve knowledge translation between the two parties. Furthermore, the way that academic research is funded and incentivised often encourages competition rather than collaboration, which then creates barriers to knowledge exchange between academics:

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*I think that there are particular academic barriers to start with. I think we can name REF [the Research Excellence Framework], we can name institutional competition because of the funding, you know. There is no such thing as a true collaborative bid. There's always got to be a lead institution.*

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Quote from Participant Ac2

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The contrasts between the disciplines or ‘worlds’ of public health practice and academia are considered in depth in the next chapter, but an important factor to highlight here is the way in which different sectors are funded. One participant working in the voluntary and community sector gave an example of attempting to collaborate with academic partners and discovering that his organisation had been “a little bit unrealistic in terms of what we were ideally wanting for the amount of money that was involved” (Participant Pr3). This situation was compounded by miscommunication, resulting in unmet expectations for all stakeholders. These issues are considered further in the next sub-section.

### **Targeted messages**

A major challenge for those attempting to undertake KT/E involves “trying to get the right message to the right people” (Participant Ac1). In this sense, the ‘right message’ is one

which is most relevant and likely to have a positive impact within a given context. Those based in academic institutions may find it difficult to construct these messages without input from practitioners or community members. Furthermore, the different stakeholder groups also struggle to find a common language. One participant recalled their experiences of working as a practitioner and attempting to engage with the research evidence base: “I would look at something and go, oh, that first paragraph is incomprehensible and I can't be arsed or bothered looking at what all that means. What else have I got?” (Participant Ac10). This quote highlights the importance of communicating research findings in a way that is accessible to those with different knowledge bases and worldviews. The various stakeholders are also likely to have different priorities and pressures on their time. There was a perception that academics have the ‘luxury’ of being able to engage in research and other activities associated with knowledge translation, whereas practitioners are too busy ‘doing’ public health. The following quote illustrates the need to address a number of competing priorities when constructing knowledge translation messages:

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*If you're working in a University environment, you need to get a [research] paper out of it, you need to get... You know, you need to see the big picture. Whereas often, what people want from local bits of research isn't the big picture. They want to know what's going to work in their community. And that's quite hard, to balance those two priorities.*

Quote from Participant Ac10

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There was a suggestion that a culture of knowledge sharing does not exist in public health practice and that “sometimes there's a bit of an element of people want to keep things to themselves. ‘I know that. I'm not going to tell you because then I know more than you do’” (Participant Pr3). Participants gave examples of people feeling defensive and suspicious of others when they believe their positions are threatened, as they are in the current NHS structural reorganisation. This sort of atmosphere acts as a barrier to the exchange of knowledge between or within teams of practitioners. In more stable times, there may still be an inclination to favour doing things the way they have always been done rather than risk disrupting the status quo. This is illustrated by the first quote below. The second quote highlights the importance of the parties involved in KT/E having some understanding of each other's roles. A lack of understanding can enhance feelings of insecurity and anxiety:

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*And the fear of the unknown as well. You know, as great as it is sharing information and knowledge, you know – some people know what they're doing is working. Even though it's limited, they don't want it being tampered with. You know, they want it to maintain... They want to maintain that status quo. [...] So as exciting as it is, especially for academics, to say, “We need to work on what's*

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*actually happening, and what's new", on the ground it can create a lot of tension and anxiety in terms of people changing the way they do things, and how they approach clients and things like that.*

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Quote from Participant Pr2

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*The problem is also that you might sometimes talk to people – say, transfer your knowledge to people – who haven't got the basic understanding. And you might actually confuse them and make them very insecure. Or very... Feel uncomfortable in themselves. So it's very important you know who you're talking to and which knowledge you do transfer to which group and where their level of understanding is.*

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Quote from Participant St2

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Participants offered several potential solutions to these problems in terms of facilitating the delivery of the right messages to the right people. One solution involves the co-location of public health practitioners and academics, generally in practice settings (as illustrated by some of the examples given at Appendix D). Both parties are then able to achieve some insight into the worlds of practice and academia, and potentially reach a common understanding. As one participant said, "You've got to be in among it. Otherwise how are you going to know what their values and differences are?" (Participant Ac10). This insight contributes to the goal of knowledge translation directly by adding credibility to the messages being delivered, and indirectly by facilitating the involvement of a range of stakeholders at all stages of the research process. This is illustrated by the quote below. Personal, face-to-face interaction was generally felt to be preferable to other forms of communication, such as the use of email or websites.

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*[Knowledge translation] is not just something that's going to happen at the end of the project. We're a constant presence. It's like thrust upon them. Like, from the very beginning of the project we had to have... We had school involvement right from the very beginning. Parental involvement. Parent and children groups. The young people designed the intervention materials that they were going to get. [...] It's been right from the offset, not right at the end.*

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Quote from Participant St10

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### *The nature of the evidence base*

In addition to ensuring the right messages reach the right people, there is a need to ensure these messages are timely and in a format that makes them applicable to ‘real world’ settings. The research evidence base was described as extensive and in a constant state of flux, which makes it difficult for practitioners to keep up-to-date with new developments. At the same time, the ‘real world’ is constantly changing and so it is easy for research findings to become out-of-date. This relates to the point made earlier that practitioners are often too busy ‘doing’ public health to either contribute to or effectively use the evidence base. The quote below describes this situation but identifies time constraints as the primary issue. Some academic participants also reported difficulty in dealing with the volume of available evidence and relying on systematic reviews or evidence briefings. As one person said, “How can you possibly manage that kind of amount of information? You hope someone has done a systematic review at the right time – when you need to use it – basically” (Participant Ac10).

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*Sometimes you're directed to documents or pieces of research occasionally within your work, from your colleagues and your managers, but then you aren't... You aren't enabled to have that time to actually spend time reading those articles and getting familiar with that information. Or even having conversations about that information – which would be really useful – because you're too busy focusing on doing the day-to-day thing.*

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Quote from Participant Pr3

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Students and ECRs had particular concerns in terms of lacking a forum to disseminate the findings of small-scale pieces of research or results from ongoing studies. One ECR stated that, “There’s quite a lot of restriction to actually being able to just share your little interesting findings – that might actually help with someone else’s project or someone who’s thinking about starting a project” (Participant St8). These restrictions include the need to publish findings in academic journals in order to advance in their careers, the specific requirements of these journals, and maintaining the anonymity and confidentiality of research participants. Practitioners reported some difficulties in accessing research evidence in the form of academic publications. There was a strong preference for open access publishing and also for mechanisms such as table of contents alerts, where relevant research is delivered directly to them with few time or cost implications. There was a perception that publishers create barriers to KT/E by “locking down knowledge” in order to generate profit, resulting in a situation where research evidence becomes an exclusive commodity rather than a resource that everyone can access (Participant Pr4). Many of the issues discussed in this sub-section are described in the quote below, from a practitioner who was also a postgraduate student:

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*Well, it's my perception anyway that there's lots of pieces of work done, but it doesn't actually filter down to anybody. Like, not in a big way. You know, the articles – they're put in journals that are really hard to access and blah-blah-blah, and I really struggle with that. I mean, even as a student with my password, trying to get on and get access to things... I just don't understand why that information isn't more broadly shared, you know. And then it's written in a language that is so difficult for the majority of people to understand, so there's no knowledge translation going on there.*

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Quote from Participant Pr3

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A final issue relating to the nature of the evidence base involves the challenge of moving from increased knowledge to sustained behaviour change. Participants gave the example of tobacco smoking, where evidence demonstrating the harmful effects existed long before major reductions in smoking prevalence were achieved. Other examples include changing social norms in favour of seat-belt wearing and against drink driving. The expanding evidence base was believed to be just one of a number of factors contributing to these changes. The role of contextual factors is considered below.

### ***The wider context***

As one participant stated, “There’s a lot of problems, in terms of that whole knowledge trajectory, in terms of things which, by and large, are outside of the individual control” (Participant Ac6). These problems or barriers range from the national policy context to local organisational constraints. A whole range of factors may interact so that “you cannot deliver what this policy is asking you to do because you haven’t got the environment that you can deliver it in” (Participant Ac6). In general, there was felt to be little strategic push for knowledge translation and most examples of KT/E could be described as ‘bottom up’ rather than ‘top down’. The ongoing NHS structural reorganisation was seen by practitioners as a significant threat to existing partnerships and relationships that enable knowledge transfer or exchange. As stated before, these structural changes were felt to create a situation where “People are holding back and not wanting to share information with others” (Participant Pr3).

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*There's a real danger in this period of transition that things will get lost off. Systems will go. People won't be in the same place. They'll lose a lot of the stuff around the evidence and how we know what works, because a lot of it is not in the public domain, necessarily.*

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Quote from Participant Ac8

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The quote above highlights the danger of evidence or knowledge being lost in the process of transition within public health. However, there was a minority view that the NHS reorganisation might provide an opportunity to form new partnerships and try new ways of doing things in an effort to enhance efficiency. This is illustrated by the following quote from a practitioner based in the voluntary and community sector:

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*Obviously the whole of the NHS structures are being thrown up in the air. And there's, well, there's lots of stuff in the media about the dangers of what could go wrong. And I'm sure there's a lot that could go wrong. But I think one of the opportunities there is that... By working... There's an opportunity that working in partnership with other organisations – by us working in partnership with GPs and academics – that we can help create services which are more effective than what's been done in the past.*

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Quote from Participant Pr1

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Due to the unique characteristics of the North East there were also felt to be opportunities to work towards knowledge translation for health improvement at a regional level, although this suggestion was not expanded upon by participants. The five universities within the region have a history of collaborative working, and the existence of Fuse was felt to provide an additional driver for working with policy and practice partners. One participant reported a concern that those working in some areas of the North East may not have access to Fuse meetings and events, but the website was generally felt to be an excellent source of up-to-date information. No mention was made of other structures or bodies that could act as a source of information or facilitate collaboration across the region. This focus on Fuse may not reflect a lack of knowledge or consideration, but rather result from the participants' perceptions of what was desired given the study was funded by Fuse. The role of Fuse and other stakeholders in KT/E is explored further in the next section.

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*You know, regional infrastructure has all gone by the board and we've lost One North East [the regional development agency] and government offices, they've all gone. But actually, within the North East, we've got a really amazing, I think, network of universities and... And partly because the North East is characterised by such massive health inequalities, there is a uniqueness to this part of the country that is maybe different to other parts of the country. So the benefits, in terms of cost-efficiency driving up health improvement – all of that stuff – you know, maximising, kind of, improvements in health across the board and therefore saving money... The benefits of doing it as a region would be enormous.*

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Quote from Participant Ac13

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## Roles and responsibilities within KT/E

Various stakeholders were identified as being involved in KT/E activities in a public health context. These include government, policy-makers, commissioners, practitioners, academics, students, patients and members of the public. Each of these groups has a different role to play in generating, communicating or applying knowledge, with the aim of improving health. The roles and responsibilities for each group may also change depending on the context and the knowledge, skills and expertise required to address a particular problem. Ultimately, KT/E was seen as a shared responsibility. One participant drew parallels with a common phrase in public health, saying “Every contact is a knowledge translation / exchange contact” (Participant Ac15). The following sub-sections focus on the roles and responsibilities of each of the key stakeholder groups consulted in this study.

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*I would see it [knowledge translation] as the responsibility of both... Well, of all partners. Because for me, it's not a... You know, actually, universities can't do it by themselves and nor can practitioners do it by themselves.*

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Quote from Participant Pr4

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### Public health practitioners

Practitioners were felt to have a key role to play in applying evidence or knowledge to ‘real life’ settings. However, they were unlikely to label this activity knowledge transfer, exchange or translation, and instead described themselves as working in collaboration to achieve health improvement. The variation in terminology is explored further in the next chapter. The term co-production was used to describe an ideal situation whereby a range of stakeholders work together to share their expertise and gain mutual benefits. See the quote below for an illustration. Each stakeholder group expressed frustration at the idea of academic pieces of work that are not translated into practice. One participant said, “I am infuriated by research in Universities which results in academic documents that go nowhere. It infuriates me. And I think it's a massive waste of public money” (Participant Pr4). In general, it was seen as the responsibility of academics to resolve this situation, but it was also acknowledged that services and practitioners have a responsibility to remain flexible and open to changing their practice.

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*In moving forward as an organisation, we feel that we need to be making links and partnerships with health-related academics as well as with... As well as with GPs. Ideally we're aiming to move towards a kind of co-production system where we can, kind of, bring together expertise in health academics, the practical knowledge of GPs, the health expertise of our staff and the life experience of*

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*some of our volunteers – many of whom are ex-clients and service users – to create a better service for everybody.*

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Quote from Participant Pr1

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Some individuals could be described as taking on the role of KT/E champions within their teams and organisations. This involves having knowledge of both practice and academia, as in the case of students on a Masters in Public Health programme. These individuals often engage in KT/E informally at an individual level, as illustrated by the quote below. They act as a conduit for the movement of information from academia to practice, and are able to translate this into language that others are able to understand and apply. A PhD student who is also a public health practitioner described her role as a “pathway for me to do it [knowledge translation]... a forum that I’m in on a daily basis”, facilitated by the fact that “The information that I’m dealing with in my academic life and within my practitioner life is overlapping” (Participant St3).

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*Personally, and probably with one of my colleagues, we do it [knowledge translation]. But I don't think we do it because we have to, it's kind of probably because I'm doing the MPH [Masters in Public Health]. Recently, one of the lecturers sent us some links on public health. So I ended up looking further into what's actually happening to the new structure and disseminated it to the entire team. I didn't have to do that. But I just thought, I don't think people know, you know, these papers are now out and stuff like that.*

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Quote from Participant Pr2

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### ***Students and early career researchers***

In general, students and ECRs did not see themselves as engaging in KT/E, largely because they felt there was no push for this from their supervisors. Their primary concern was completing a thesis and passing their PhD, as well as producing academic publications in order to advance in their career. However, they were keen that their research had some impact on policy and practice. This required them to be proactive and take the initiative, rather than being encouraged by supervisors or supported by some form of knowledge exchange broker. One PhD student said they would have liked “to have seen, for our PhDs, more involvement from the beginning of the people, organisations you’re trying to, kind of, improve, influence with your research” (Participant St5). On the whole, students appeared to feel their research was too small in scale to be ‘worthy’ of formal knowledge translation:

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*I think for us as PhD students, there tends to just be us that's interested [in their own research]. And it's... We're on our own and, you know, we've got our funding from wherever. And there's just like our little bubble of people that are interested. And so, at that level I think it [knowledge translation] does fall on us. But as you get into much bigger projects and much more important... Important is the wrong word, I think. But much, kind of, bigger news for people and policy-makers and all of that, then I think yeah, you do need [a champion/knowledge broker].*

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Quote from Participant St4

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### **Academic public health**

As stated previously, co-production of knowledge was seen as the ideal situation by stakeholders. In reality, KT/E is reportedly driven by academics as the 'producers' of knowledge, with practitioners and lay people as the 'consumers'. This results in a situation where the KT/E process is driven by an academic agenda, rather than occurring either collaboratively or organically. One participant said, "My view is between academics and practitioners, that sometimes academics are the ones kind of pushing it [knowledge translation]" (Participant Ac4). This situation was not always seen as problematic and practitioners generally felt it was valuable to have a degree of academic involvement to add credibility and rigour to their work. Research conducted by academics can generate new knowledge and ideas to be explored by those working in public health practice:

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*There's been light-bulb moments for commissioners where, when you've gone out and done [research] and spoken to patients, or spoken to service users, and they've come up with something that's very, very easy to fix, but the commissioners didn't actually even see as being a problem.*

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Quote from Participant Ac11

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There was felt to be a role for over-arching organisations like Fuse in terms of "building some of those bridges" between academia, practice and local communities (Participant Ac13). No other overarching organisations (for example the Institute for local Government, ILG) were mentioned, perhaps due to the participants' perception of the study as being focused on the activities of Fuse. The quote on the following page highlights a need to bring the five North East universities together to engage in more collaborative working and demonstrate the relevance of their work to public health practice. One participant also suggested that Fuse should be responsible for producing "some kind of guidelines on how and when to do it. Like, how can you integrate the knowledge translation or exchange through all the process of undertaking research" (Participant St9).

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*Universities work in silos, and that's forever going to be the case. And I don't think Fuse is going to change that overnight. [...] If you imagine that Fuse has a role to hover over the five silos and then receive what's coming out of those, you know. So all of the universities are doing good things, good stuff. And then it's a case of synthesising the outputs from all of those universities – if that's appropriate – into a translatable knowledge, sort of, commodity.*

Quote from Participant Pr4

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A final role for Fuse involves the employment of a knowledge exchange broker, who is responsible for undertaking some of the bridging work between academia and practice. This constitutes part of the process of ensuring that the right messages reach the right people. One participant queried whether, “For translation to take place, do you need an interpreter?” (Participant Ac11). The Fuse knowledge exchange broker was seen as a valuable role in terms of acting as a type of translator and raising awareness of KT/E, whilst also prompting people to think about and debate these concepts:

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*I think where [name of Fuse knowledge exchange broker] has a very important role is about taking [knowledge translation]... It's making people understand what it's about, and you know, raising some questions. [...] So even if it's just about raising the questions and, you know, irritating us and saying, well, okay, but what is it? So that... We need that debate, rather than assuming everybody knows it and everybody is doing it.*

Quote from Participant Ac2

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This chapter has considered the different roles and processes involved in undertaking knowledge translation, transfer or exchange. The final findings chapter explores in greater depth some of the issues around language and power associated with KT/E.

## Findings 4: Language, Knowledge and Power

This chapter deals with the macro context within which the concepts and processes of knowledge transfer, exchange and translation are situated. The chapter emerges from exploration of the specific issue of ‘language’ as identified by participants themselves and the actual language used by participants during data collection. From these explorations, some of the more implicit meanings and discourses at play are surfaced and described. Thus the consideration of context is widened beyond a simple dichotomisation of systems or groups in public health.

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### The concept of knowledge

Several participants questioned what was actually meant by the term ‘knowledge’. One participant posed the direct question “... and what is knowledge? What are we actually talking about” (Participant Ac11), while another also sought clarity by stating “I would love this project to come out with a really solid definition of knowledge” (Participant Ac14). Thus discussions around the terms knowledge translation, exchange and transfer were compounded even further by a lack of clarity regarding what ‘knowledge’ was being referred to in this context. One participant summed up the variety of ‘knowledges’ which may exist and which may complicate the discussions being held:

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*I suspect what makes this whole thing very complicated is these different understandings of what knowledge is, and all the variance under that heading.. because for some people personal experience is knowledge. For other people, unless you’ve read it in a library, it’s knowledge. For other people it will be the policy directive is the knowledge to have... And for other people it might be propaganda, and so forth... There’s an enormous range there of understanding what knowledge is.*

Quote from Participant Ac5

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In relation to the ‘knowledge’ to be transferred, translated or exchanged, some participants referred to ‘evidence’ or research findings, while others talked about ‘facts’, ‘information’ or just used the word ‘research’ to indicate knowledge.



Participants acknowledged the value of partnership working and the co-construction of knowledge, and expressed a desire for greater collaboration, especially in relation to KT/E. Indeed, there was a feeling from some that academia is undergoing a shift or change towards a more 'beneficial' impact-orientated enterprise. However, the majority of language used in the focus groups and interviews referred implicitly or explicitly to 'academic' knowledge and highlighted the continued existence of an underlying discourse which sees KT as mainly concerned with the movement of 'academic knowledge' into practice. Participants talked of knowledge generation as "one of the jobs of an academic" (Participant Ac2) and something academics are "great at" (Participant Pr4). Students and ECRs referred to the processes of KT/E as ways to "get the impact across" (Participant St3) or "get the research out there" (Participant St6). Although practitioners talked much more about collaboration with academics, there was still an underlying theme regarding academic knowledge, as illustrated by one practitioner who noted that "we tend to just look at the evidence coming through, and we focus on it" (Participant Pr2). This theme is further illustrated by the following quote:

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*My understanding of a thing – say a public health intervention – might be subjective. But when it has got an academic grounding we assume, from an academic point of view, that it is objective enough to be called knowledge.*

Quote from Participant Pr2

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Indeed practitioner knowledge (experiential, contextual, tacit, personal) was identified to a much lesser extent as the 'commodity' to be translated or moved, except in relation to knowledge exchange.

## The issue of 'language'

### *The role of language in the process of KT/E*

Closely linked to the debates and questions regarding the nature of the knowledge was the issue of language, which emerged strongly across all of the data collected. This is perhaps unsurprising given the focus of the study includes the term 'knowledge translation'. While this term is sometimes used in health care to signify the process of putting ideas or theories into action, in everyday language 'translation' is generally used to denote the process of expressing something using words from a different language. Many of the participants highlighted this common understanding by describing a need to 'interpret or change' language in order to render 'understandable' the knowledge to be shared or moved. One practitioner summed this up saying "If you don't understand it, then it hasn't been translated" (Participant Pr3). Academics and students also raised the issue of language and understanding, as the following quote illustrates.

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*Knowledge translation is that you really take the other into account – and the language they speak – and try to put it into their language. So, for example, you talk to patients and you try to explain in lay terms or non-medical terms, so that you can make sure that they understand.*

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Quote from Participant St2

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Central to this discussion of translation are the assumptions that;

- Different groups within public health speak different languages [and therefore a need exists for the process of translation] and
- The purpose of the translation process is to render ‘understandable’ the concept [or knowledge] which is to be moved.

Several participants referred to different groups using different languages, with one participant stating “academics and practitioners all speak different languages”. Practitioners emphasised the language used by the academic community, particularly in written form. Such language was seen as being ‘flowery’ or obtuse and thus rendering research findings inaccessible – hence the need for translation. In reference to academic writing in journals, one participant said “Why do we need to write that way? No-one speaks that way, and understands that way” (Participant St3), while a practitioner linked written language full circle back to the notion of knowledge translation:

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*It’s written in a language that is so difficult for the majority of people to understand, so there’s no knowledge translation going on.*

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Quote from Participant Pr3

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Across the participant groups there was a feeling that appropriate language needed to be used depending on the audience, otherwise the knowledge “would be completely meaningless to them”. Some used the terms ‘understandable’ or ‘making sense’ to explain the centrality of language, while others highlighted the need for language which renders concepts ‘accessible’ or ‘reachable’ in the first instance.

The terms knowledge translation, transfer and exchange were themselves seen as discouraging engagement. One participant suggested “You start talking about knowledge transfer, I think it puts people off” and appeared sceptical regarding the use of academic language, seeing it as “playing with words” and perpetuating “the barriers between academia and practice” (Participant Ac4). A student described seeing the terms and thinking they were ‘academic-ey,’ which also appeared to act as a deterrent to engagement.

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The need for a ‘different’ and ‘shared’ language which belonged neither to practitioners nor academics was proposed as a way forward. However, neither the feasibility of this suggestion nor the potential problems involved were considered in the discussions. Such a suggestion may reflect a ‘knee-jerk’ reaction which does not go beyond the superficial and the limitations of restricted discussion time. Thus, a common theme emerged which sees language as central to the process of knowledge translation and closely linked to the process of understanding. However, the power of language in deterring or dissuading people from engaging with whatever knowledge type is being provided was also highlighted and scepticism regarding the reasons behind language use emerged.

### *The language used to talk about the processes of KT/E*

While language emerged strongly as a key factor in the processes of translating, transferring or exchanging knowledge, in turn the language used to talk about these processes (i.e. the terms knowledge translation, exchange and transfer) also emerged as a main theme during data collection. The terms were often referred to as ‘confusing’ and one academic admitted not feeling very confident in their use. A lack of consistency was also noted and there was a feeling that the terms ‘blurred’, ‘overlapped’ and were used interchangeably, which added to the confusion as illustrated by the quote below. This confusion may be further compounded by the potential for dual meanings, especially in relation to knowledge translation. The term can be used to denote a process of changing language in order to transfer meaning (as discussed previously), and also to signify the process of putting ideas or theories into action or practice (as noted in Findings 2: Definitions and Conceptualisations of Core Terms).

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*I think it sort of makes sense until you start reading... And then I get confused, because I think I know what it means, but... I don't think everybody uses them in a consistent way... Then that confuses me even more. I wish people would be more explicit about exactly what they're talking about. And when they use the terms interchangeably, I don't think it helps.*

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Quote from Participant Ac6

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Furthermore, from the participants’ comments it seems that a paradoxical situation may exist in relation to the terms. On one hand there is often an assumption of shared understanding with everyone using the terms “without really reflecting on what they [are]” (Participant Ac2) and them having become ‘fashionable’, whilst on the other hand there is an acknowledgement of confusion and a need to debate and discuss interpretations of the terms. This assumption of shared understanding may mask multiple interpretations resulting in people talking about subtly different things (see Appendix E for an illustration



of some of the subtle differences that emerged in this study). Furthermore, different groups were felt to have slightly different interpretations of the terms knowledge translation, transfer and exchange. For example, funding bodies were suggested as having particular views, while patients, service users, commissioners and policy makers would have different understandings. An example of this issue of diverse interpretations was noted in one of the focus groups combining academics and practitioners:

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*Pr4: So for Fuse, what do you consider to be your... your knowledge or your commodity that you think could be protected? And where it might have value in the marketplace?*

*Ac11: For me, it's really interesting hearing you talk – because you come at it from such a different place to where I do. So I don't think about it [knowledge] in terms of a commodity, but I suppose in some ways it is. And the wealth of research which is going on...*

*Ac13: So what we've got here [in the focus group] is a nice example of knowledge exchange. We're all talking entirely different languages.*

*Ac11: Cross-purposes, that's true. So actually defining even what... You know, what the thing is that we're wanting to transfer... is huge.*

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### Quotes from Focus Group 3

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Thus diverse groups not only used different languages in their everyday work (technical language and jargon), they potentially hold slightly different views of what the terms KT/E mean. Ironically, therefore, while some similarities in understanding exist (see Findings 2), this is contrasted by subtle differences in the ways in which the terms are used, interpreted and talked about (see Appendix E). The quote below sums up the situation. Thus, ironically the terms knowledge translation, transfer and exchange were seen as themselves requiring translation, or at least debate and discussion.

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*It's like... You know, in the field research I do, everybody seems to know what active aging is. And I can assure you that no-one has a clue. And I think it's the same thing here [with knowledge translation]. [...] We need that debate, rather than assuming everybody knows it and everybody is doing it.*

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### Quote from Participant Ac2

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### *Language and power*

While language emerged as a key factor in the processes of KT/E – and also central to the articulation of interpretations of the terms – a further theme emerged which dealt with the issue of language and power. During the discussions many of the participants referred to language as serving purposes other than the transfer, exchange or translation of ideas or knowledge. Language was also seen to ‘belong’ to different groups and was intrinsically linked to the notion of power. The terms knowledge translation, transfer and exchange were seen as pertaining to the academic world, as the following quotes indicate:

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*I don't really hear [the terms] being used outside of... The academic institutions. [...] I don't mean that they don't think about it. I think it's just conceptualised differently. I don't think they necessarily used that language. But they talk about evidence-based practice, yeah.*

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Quote from Participant Ac11

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*Pr1: They [KT/E] are terms that we, I guess, maybe respond to, but not terms that we [as an organisation]... would use in our communication.*

*Int: Right, okay. So do you see them as maybe academic labels?*

*Pr1: Primarily, yes... But, yeah... I think they're labels that I view positively.*

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Quote from Participant Pr1

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Language was viewed as ‘creating a power’ (Participant Ac11), thus the act of researching and collating evidence was seen as academics ‘giving power’ to practitioners. As one participant said, “In effect, by writing it down and saying, ‘Look, this is what’s happening’, and they can take it to, you know, higher management or whatever and say, ‘We need funding for this’” (Participant Ac6). The use of language was also perceived as powerful in helping groups fight for “self preservation” or be noticed (Participant Ac11), for example through the publication of research in academic journals.

Using specific language in order to publish was viewed as part of a process of ‘feathering an academic career’ (Participant Ac10) and thus linked to larger academic agendas and competing priorities. Funding bodies were also suggested as using particular language as a way of “controlling their knowledge” (Participant St2), while local authorities were cited as using language to “take ownership of [a] body of knowledge” (Participant Ac12). Thus language was clearly linked to the notion of different bodies of knowledge that intrinsically embody power potentials. However, the language-power relationship was not viewed as

simply existing in one direction from academia to practice, as the quote on the following page highlights. Therefore, while perceptions exist regarding the use of language in creating power differentials across groups and serving multiple agendas (including self-preservation and control of knowledge), some participants seemed to suggest that the relationships and discourses at play were much more complex and multi-directional.

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*Academics use language that nobody else understands, but it's all about power and control isn't it? The same in the practitioner world. You know, you use language and things that you understand, but you've got to be important to translate that for other people.*

Quote from Participant Ac15

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This chapter has explored the issues of language, power and knowledge as they emerged from the data. The following chapter involves discussion of the study findings in light of the strengths and limitations of the study, and in comparison with the existing literature.



# Discussion

In this chapter, the main findings of the research are discussed in light of the original study objectives and the existing literature. The strengths and limitations of the study design are also explored, before concluding remarks are made.

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## Strengths and limitations of the study

This study set out to explore, articulate and map stakeholder conceptualisations of knowledge transfer, exchange and translation across public health in the North East. Although we have been successful to some extent, the areas of least success (i.e. engaging ‘practice-orientated’ stakeholders and those from local government) may actually indicate something beyond the study design but which is about the moment in time during which the study was undertaken (when the whole health system was in disarray) and about the topic itself. Thus, a number of key questions have arisen:

- How relative or meaningful are the concepts to the different groups?
- Has the language used been a barrier to participation in the study?
- Do other groups ‘do it’ or try to do it but call it different things?

After the initial recruitment strategy resulted in very few people from practitioner and commissioner communities volunteering to participate in the study, several attempts were made to enhance recruitment from these groups. The call for participants was repeated, personal networks were used as part of a snowball sampling approach, and an alternative format of data collection was introduced which offered one-to-one interviews (either face-to-face or by telephone). The final number of participants who could be classed as ‘practitioners’ (i.e. either holding a post in public health service delivery or having a strong background in working directly in public health services) was only five out of a total of 34.

While this is a clear limitation of the study, it may also be an indication of:

- The relevance of the concepts for those groups (as highlighted in Findings 4: Language, Knowledge and Power)
- The perceived importance of the study
- The wider context of political upheaval and significant change across health care at the time of conducting data collection

## Summary of key findings

The following sub-sections summarise the findings from the focus groups and interviews, drawing out important similarities and differences between the stakeholders. These address the original study objective of comparing and contrasting understandings of knowledge transfer, exchange and translation across diverse professional groupings in public health. The study findings are discussed in light of the existing research literature, primarily drawn from the rapid review conducted during phase one of the study.

### *Conceptualisations and understandings of KT/E*

The findings of this study are similar to those of the existing literature in terms of identifying multiple interpretations and a lack of shared understanding of knowledge translation and other related terms. However, there was some agreement concerning the properties of these terms or concepts. Knowledge transfer, for example, was almost universally described as a linear process involving the one-way movement of information that is not modified during transfer. This term was felt to suggest a top-down approach, involving movement from academia (the site of knowledge production) to practice (site of knowledge consumption). Practitioners, students and early career researchers (ECRs) were less likely than academics to see knowledge transfer as having negative connotations and more likely to employ fluid definitions of the three core terms. This is supported by a study by McAneney et al. (2010), which found that academics and non-academics have different expectations of knowledge transfer and different levels of confidence in the potential impact on public health. Their study found that non-academics were more confident than academics that an organisation similar to Fuse in Northern Ireland could help to deliver more public health interventions. In our study, many of the ‘real life’ examples given by practitioners, students and ECRs fall into the categories of knowledge transfer and exchange rather than knowledge translation. Knowledge exchange was described as similar to knowledge transfer, but with a key difference being that the former involves the two-way movement of information between or within groups. In other words, it involves a dialogue between knowledge producers and consumers. The process was believed to be facilitated by both parties speaking the same (professional) language. This is underpinned by communication theory, which states that messages are more likely to be accepted if they are delivered by someone similar to the audience but with greater prestige, and if the information is useful, simply put, relevant and novel (Foulger, 2004).

Knowledge translation was invariably described as a more complex, multi-dimensional activity than knowledge transfer or knowledge exchange. It involves the boundaries between knowledge producers and consumers becoming blurred, so that all parties have a role to play in constructing new knowledge. Three key elements of this process were identified: sense-making, transformation, and application. There is a high degree of overlap

between these elements and the themes identified by Pentland et al. (2011) in their review of literature on KT in health care. These themes are: sharing knowledge, generating knowledge, applying knowledge, and knowledge brokering. Similarly, Ward et al. (2009) identified five common components of the KT process, which are: problem identification; research development; analysis of context; KT activities or interventions; and knowledge utilisation. In our study, contextualisation was identified as an important part of the knowledge translation process, which results in knowledge being adapted and transformed in some way. Therefore, our work adds to the existing literature – and particularly to the components identified by Ward et al. (2009) and Pentland et al. (2011) – by introducing the concept of transformation in the KT process. Again, there were some differences between academics and the other stakeholder groups, who appeared to be less confident in using or defining knowledge translation. Practitioners were more likely to use the term co-production to describe the process of working in collaboration with a range of stakeholders to generate relevant public health knowledge. All of these terms can be considered ‘slippery concepts’ in that there remains a lack of consensus on their meanings and properties, and a high degree of crossover. These findings are supported by the findings of the existing literature (Landry, 2006; Dobbins, 2004, 2009a, 2009b).

### *The process of undertaking KT/E*

Study participants identified a number of barriers, facilitators and incentives to engaging in KT/E activities. This is in contrast to the work by McAneney et al. (2010), which found that almost half of participants perceived no barriers to attaining the benefits associated with KT/E. However, 81% of those that did identify barriers cited lack of resources in terms of time, funding or personnel as the main concern. The barriers created by a lack of time and capacity was also identified as a limiting factor to research evidence uptake in a recent regional study (Rushmer et al 2011). The key influencing factors identified in our study have been grouped into four categories: access to funding, targeted messages, the nature of the evidence base, and the wider context. A key concern for all stakeholder groups was how to target the right people with the right messages, as well as accessing the resources needed to fund this activity. Dobbins et al. (2009a) conducted a randomised controlled trial (RCT) to demonstrate that, under certain conditions, targeted messages are more effective than other strategies (including an online registry and use of a knowledge broker) in the incorporation of research evidence into policy. Armstrong et al. (2007) also found that resources themselves are unlikely to act as agents for change unless they are linked to a knowledge management process that includes practitioner engagement. Participants in our study stressed the importance of involving a range of stakeholders at different stages of the KT/E process, in order to ensure that the knowledge is relevant, useful and applicable in real world settings. This is again underpinned by communication theory (Foulger, 2004) and supports the findings of Strauss et al. (2011) in suggesting that involving the end-users of knowledge will help to ensure that implementation is successful. Other authors have also suggested that the gap between researchers and practitioners is best filled by

interpersonal contact to improve the use of knowledge, rather than relying on passive dissemination strategies (Thompson et al., 2004; Pentland et al., 2011).

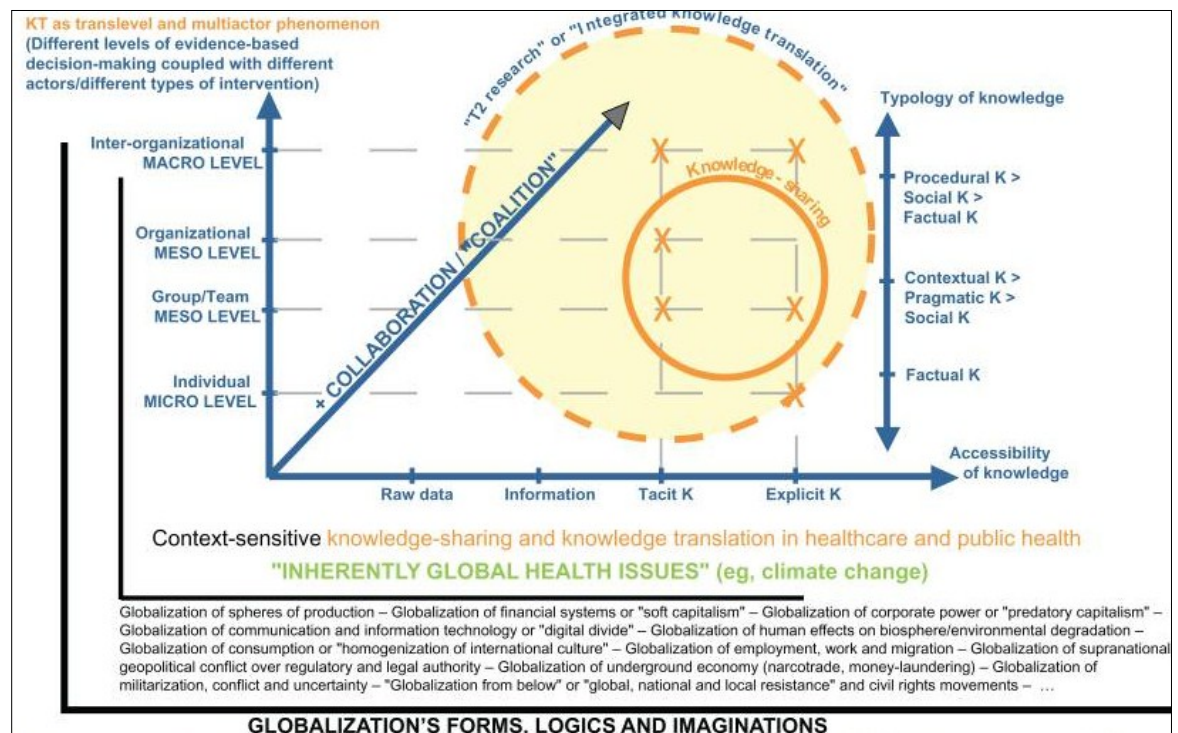
The potential role of a knowledge broker model in supporting the KT/E process has been explored in the existing literature (Armstrong et al., 2007; Dobbins et al., 2009a; 2009b; Pentland et al., 2011). In their survey of 98 self-selected practitioners, scientists and policy makers, McAneney et al. (2010) found that non-academics were significantly more likely than academics to identify their goals as aligned with 'knowledge brokerage'. This is in contrast to the findings of our study, where participants identified Fuse as an academic organisation with an important knowledge brokerage role. However, practitioners also described themselves as taking on the role of KT/E 'champions' within their organisations. This may require the use of creative, non-academic approaches to integrating knowledge types including: personal, practitioner, experiential, explicit and codified knowledge. Examples of appropriate strategies might include communities of practice, public health networks or multi-sector workshops (Kothari et al., 2011; Rushmer et al., 2011). The ability of practitioners to engage in these activities and share information with colleagues is constrained by wider contextual factors, particularly conflicting priorities, financial pressures and the ongoing NHS structural reorganisation. This period of change acts as a barrier to the formation and maintenance of partnerships for knowledge exchange, while also presenting an opportunity to develop new, more efficient ways of working. The importance of relationships, institutional knowledge and the quality of interactions has been noted in previous studies (Mitton et al., 2007; Rushmer et al., 2011). Each stakeholder has their own priorities and there exist multiple agendas, which makes it difficult to ensure that everyone is able to play a role in KT/E. For example, students did not appear to feel confident in contributing to KT/E as their priority is to conduct relatively small-scale studies in order to achieve a doctorate. However, there was a general consensus that knowledge translation is an important goal that everyone should be responsible for and working towards. As such, our model is broadly similar to the 'integrated knowledge translation' conceptual framework, which suggests that KT is both a process and an outcome resulting from dynamic collaboration between practitioners and researchers (Lapage 2010). See the diagram on the following page for an illustration.

### *Language, knowledge and power*

Across the data collected, language emerged as a key issue with a series of broad 'macro' themes emerging. These themes widen the consideration of context beyond a simple dichotomisation of systems or groups in public health to encompass deeper underlying issues of discourse and power. Several participants questioned what was actually meant by the term 'knowledge'. Some referred to 'evidence' or research findings, while others talked about 'facts', 'information' or just used the word 'research'. Only occasionally was 'practitioner knowledge' alluded to or mentioned. Therefore, the concept of knowledge as related to KT/E was generally seen as one of academic or scientific knowledge, and as a



## Integrated knowledge translation in a changing global context (Lapaige, 2010)



fixed commodity which can be transferred (Cornelissen et al, 2011). This finding reflects a common and enduring view of KT/E as being predominantly about moving scientifically-created knowledge (research) into practice. This view is also evident in the results of the literature syntheses examined, which indicate a propensity for studies to 'assume' the knowledge in question in KT/E to be research evidence (Mitton et al., 2007; Ward et al. 2009). Such a view is perhaps unsurprising given the field of KT/E has developed in part as a result of the evidence-based medicine movement (Mitton et al., 2007; Ward et al., 2009; Cornelissen et al., 2011) which, like the majority of health-related research, is situated within a technical rationality-based academic discourse that privileges scientific knowledge (Schon, 1983; Steven 2009). What is not certain is whether this would also be the view in local government where knowledge may be seen as 'softer' and potentially informed to a greater extent by experience and judgement.

In other fields, such as the social sciences and education, there has for some time been a concurrent view which recognises and values other forms of knowledge, i.e. tacit, organisational, experiential or practitioner knowledge (Eraut, 1994; Burnard, 1995; Usher et al., 1997; Steven 2009; Ward et al 2010.; Cornelissen et al., 2011). Such a view is steadily surfacing in relation to KT/E, with the idea of co-creation and co-construction of knowledge (Gabbey & le May, 2004; Cornelissen et al., 2011), ever more recognition of the complexity of transferring or implementing evidence into practice (Ferlie et al., 2005;



Lomas 2007), and of the place of other forms of knowledge in those processes. Indeed, the rapid review of literature syntheses undertaken in this study highlighted a shift in focus from generating knowledge through to exchanging knowledge, to interactive strategies and cyclical frameworks, hinting at a move towards the valuing and incorporation of other knowledge types. However, given the empirical data suggests that a 'scientific' view of knowledge in KT/E still predominates across academic public health, it may be that the shift identified in the literature represents a minority view of KT/E (only that of the academics who publish in the field) and highlights (ironically) a gap between published academic discourse and that of academic practice.

The issue of 'language' in relation to the process of translating knowledge emerged strongly across all data collected. Participants highlighted a common understanding of the word translation, describing it as a need to interpret or change language in order to render a concept or idea 'understandable'. Central to this understanding are the assumptions that

- Different groups speak different languages [and therefore a need exists for the process of translation] and;
- The purpose of the translation process is to render 'understandable' the concept [or knowledge] which is to be moved.

These assumptions are reflected in much of the KT/E literature. Indeed, Mitton *et al.* (2007) identify a number of authors who make statements about different audiences having 'different communication styles' and the need to present research in 'simple' language. In addition, the language and terms used to talk about the KT/E processes were often referred to as 'confusing' 'blurred', 'overlapped' and used interchangeably. This concurs with the number of different terms used in the literature to describe KT/E. For example, Ward *et al.* (2009) identified 58 different terms to describe the concept of KT, while a year later McKibbin *et al.* (2010) identified 100 different terms and phrases in the published literature relating to KT/E. Thus it is clear that there is potential for much confusion and misunderstanding. Furthermore, a paradoxical situation may exist with a shared understanding assumed and terms being used without reflection, alongside an occasional acknowledgement of confusion and the need to discuss interpretations. An assumption of shared understanding may mask multiple interpretations, resulting in people talking about subtly different things – as appears to be the case in some areas of the literature (Ward *et al.*, 2009; McKibbin *et al.*, 2010).

Paradoxically, therefore, while some similarities in understanding exist (as identified in the combined analysis of participants' definitions and real life examples), this is contrasted by subtle differences in the ways in which the terms are used, interpreted and talked about (as identified in the analysis of data solely regarding definitions from participants and from the literature reviewed). Furthermore, the term knowledge translation may be used to denote both a process of changing language in order to transfer meaning, and the process

of actually putting theories into action, thus heightening confusion. Therefore (ironically), the terms knowledge translation, transfer and exchange were seen by participants as requiring translation, or at least debate and discussion. This concurs with the suggestion from McKibbin et al. (2010) that there is a 'need for consolidation and consistent use of fewer terms related to KT research'. Similarly, participants also proposed the need for a 'different' and 'shared' language which belonged neither to practitioners nor academics.

During data collection in this study, language also emerged as serving purposes other than the transfer, exchange or translation of ideas or knowledge. Language was seen to 'belong' to different groups and was clearly linked to the notion of different bodies of knowledge that intrinsically embody power potentials. The power of language in deterring or dissuading people from engaging with whatever knowledge type is being provided was also highlighted by participants, and scepticism regarding the reasons behind language use emerged. This reference to the power of language reflects the notion of 'discourse' as used in areas of social science (McNay, 1996; Cheek, 2000). Discourse refers to ways of speaking and thinking about reality, based upon a set of assumptions which may be so embedded as to be almost invisible (Rolfe and Freshwater, 2004). Thus, the idea of discourse has been used to explore many issues including the way in which language and practices construct and maintain power relations and particular ideologies (Gergen, 2001; Abma, 2002). In this study, language was viewed as 'creating power', thus the act of researching and collating evidence was seen as academics 'giving power' to practitioners. Indeed the terms knowledge translation, transfer and exchange were seen as pertaining to the academic world. However, the language-power relationship was not viewed as simply existing in one direction from academia to practice. Language use was also viewed as 'powerful' in helping groups fight for "self-preservation". Thus while perceptions exist regarding the use of language in creating power differentials across groups and serving multiple agendas (including self-preservation and control of knowledge), it is suggested that the relationships and discourses at play are complex and multi-directional.

# Concluding Remarks

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Researching knowledge translation, transfer and exchange is complex given the fuzziness of the concepts and the multiple interpretations and conceptualisations which abound. This statement is borne out both by the literature review undertaken as part of this study and by the results from the empirical data collected. The study identifies a series of issues of relevance, including perceived barriers and facilitators to KT/E, and offers a series of real life examples of these activities as described by participants. The study maps the conceptualisations expressed and our findings indicate some level of consistency of interpretation of the core concepts held by stakeholders working across academic public health in the North East. However, given the limitations of the sample recruited, we are unable to make such confident statements with regard to other groups such as public health practitioners, local government, commissioners or policy makers.

A main theme to emerge across the data analysed concerns the role of language both within the process of KT/E and in talking about the processes and concepts. Ironically, the study indicates that the terms knowledge translation, transfer and exchange are seen as themselves requiring translation, or at least debate and discussion. In addition, perceptions exist regarding the use of language in creating power differentials across groups and serving multiple agendas (including self-preservation and control of knowledge), and it is suggested that the relationships and discourses at play are complex and multi-directional. While further investigation into the ever-changing nature of what academics refer to as 'knowledge translation' is undoubtedly required – particularly regarding the role of language, context, the influence of multiple agendas and drivers, and the place of KT/E champions and 'brokerage' – there is also a need for all involved to continue to find ways to work around existing issues.

# Appendices

## Appendix A: Focus group and interview schedule

- Definitions (language) of knowledge translation, exchange and transfer
  - Informal or formal / personal or institutional
  - Related concepts and terms
  - Crossover between concepts, similarities and differences
- Awareness of strategy relating to KT
  - Global, national, local, organisational, departmental
  - Policy and other drivers
- How KT works in practice within their (and other) organisations
  - Description of the process(es)
  - Concrete examples, vignettes
- Who is involved in delivering and/or managing KT
  - Specific roles and responsibilities
  - Levels of involvement within organisations
  - Their involvement (as an academic/student/policy-maker/practitioner)
- Any other issues relating to KT
  - Perceived benefits / strengths
  - Limitations
  - Areas of confusion or concern
  - Suggestions, ideas

## Appendix B: Studies excluded from the rapid review – out of scope

Reference and country of origin	Notes
Chambers, D., P. M. Wilson, et al. (2011). "Maximizing the impact of systematic reviews in health care decision making: a systematic scoping review of knowledge-translation resources." <u>The Milbank Quarterly</u> <b>89</b> (1): 131-156.  UK	Scopes availability of resources, i.e. summaries of systematic reviews.
Dobbins, M., K. DeCorby, et al. (2010). "A knowledge management tool for public health: health-evidence.ca." <u>BMC Public Health</u> <b>10</b> : 496.  Canada	Description of an online resource developed in Canada.
Eriksson, C. (2000). "Learning and knowledge-production for public health: a review of approaches to evidence-based public health." <u>Scand J Public Health</u> , <b>28</b> , 298-308.  Sweden	Dated, discussion article.
Green, L. et al. (2009). "Diffusion theory and knowledge dissemination, utilization, and integration in public health." <u>Ann Rev Public Health</u> , <b>30</b> , 151-74.  USA	Detailed description of diffusion theory.
Kerner, J. F. (2006). "Knowledge translation versus knowledge integration: A "funder's" perspective." <u>Journal of Continuing Education in the Health Professions</u> <b>26</b> (1): 72-80.  USA	Descriptive. Discusses background and challenges of closing development-delivery gap and strategies used by funding agencies in USA.
Nicolini, D., J. Powell, et al. (2008). "Managing knowledge in the healthcare sector. A review." <u>International Journal of Management Reviews</u> <b>10</b> (3): 245-263.  UK	General descriptive KM article.
Scott, S. D., L. Albrecht, et al. (2011). "A protocol for a systematic review of knowledge translation strategies in the allied health professions." <u>Implementation Science</u> <b>6</b> (1): 58-58.  Canada	Protocol, June 2011.
Waters, E., Armstrong, R., Swinburn, B., Moore, L., Dobbins, M., Anderson, L., Petticrew, M., Carter, R., et al. (2011). "An exploratory cluster RCT of knowledge translation strategies to support evidence-informed decision-making in local governments (The KT4LG study)." <u>Biomed Central Public Health</u> , <b>11</b> (34).  Australia	Protocol, January 2011 Interventions will include programme of evidence awareness, access to evidence, skills development.

## Appendix C: Studies excluded at full text reading – not reviews

Reference and country of origin	Notes	Reason for exclusion
<p>Armstrong, R., E. Waters, et al. (2007). "The nature of evidence resources and knowledge translation for health promotion practitioners." <u>Health Promotion International</u> 22(3): 254-260.</p> <p>Australia</p>	<p>Evaluates evidence-based health promotion resources to explore practitioner views and use.</p> <p>Looks at nature of the KT roles that policy and funding bodies could fulfil to encourage uptake of resources.</p> <p>Reports practitioner views about the role of central policy and funding agencies. Presents a framework for KM. Refers to 1:3:25 model for communicating evidence.</p> <p>Found resources themselves are unlikely to act as agents for change unless they are linked to a knowledge management process that includes practitioner engagement. Explores potential role of a knowledge broker model in supporting KT process.</p>	Not a literature review
<p>Armstrong, R., E. Waters, et al. (2006). "The role and theoretical evolution of knowledge translation and exchange in public health." <u>Journal of Public Health</u> 28(4): 384-389.</p> <p>Australia</p>	<p>Pre-dates above, notes investigative work to establish effectiveness of KT models. Outlines frameworks to support public health action in KT. Useful for terminology and change in roles from 'disseminate' to 'transfer' to a more reciprocal process. Useful for theoretical perspectives.</p> <p>Identifies seven models of research use describing relationships between researchers and users of research.</p> <p>Identifies innovative (in 2006) KT strategies, i.e. website, targeted evidence messages, knowledge brokering. Describes five-stage framework to support KT.</p> <p>Refers to 'diffusion of innovation' work but notes all these models focus on the transfer of research knowledge to shape policy and practice. Suggests a complementary interactive approach: "the transfer of policy, practice and personal knowledge to shape research with the aim of creating a demand for subsequent findings." p. 387</p>	Not a literature review
<p>Armstrong R, Waters E, et al. (2011). "Knowledge translation strategies for facilitating evidence-informed public health decision making among managers and policy-makers." <u>Cochrane Database of Systematic Reviews</u>, Issue 6. Art. No.: CD009181.</p> <p>Australia</p>	<p>Objective: To determine the effectiveness of KT strategies aimed at facilitating evidence-informed public health decision-making by managers and policy-makers.</p>	Not a literature review; work in progress.

<p>Dobbins, M., K. DeCorby, et al. (2004). "A knowledge transfer strategy for public health decision makers." <u>Worldviews on Evidence-Based Nursing</u> 1(2): 120-128.</p> <p>Canada</p>	<p>Example of data analysis of a KT strategy and important components of a strategy.</p> <p>Also reported as a framework for the dissemination and utilisation of research for health-care policy and practice.</p>	<p>Not a literature review.</p>
<p>Dobbins, M., S. E. Hanna, et al. (2009a). "A randomized controlled trial evaluating the impact of knowledge translation and exchange strategies." <u>Implementation Science</u> 4.</p> <p>Canada</p>	<p>RCT evaluating three KT/E strategies (online registry, tailored messaging, knowledge broker) in the incorporation of research evidence into policy.</p> <p>Results showed that under certain organisational conditions tailored, targeted messages are most effective.</p> <p>Gives references to other 'frameworks' that illustrate the process of KT and evidence-informed decision making.</p>	<p>Not a literature review; focus is on KT strategy.</p>
<p>Dobbins, M., P. Robeson, et al. (2009b). "A description of a knowledge broker role implemented as part of a randomized controlled trial evaluating three knowledge translation strategies." <u>Implementation Science</u> 4: 23-23.</p> <p>Canada</p>	<p>Detailed description of one KT strategy of the above RCT.</p>	<p>Not a literature review; focus is on KT strategy.</p>
<p>Kothari, A. R., J. J. Bickford, et al. (2011). "Uncovering Tacit Knowledge: A Pilot Study to Broaden the Concept of Knowledge in Knowledge Translation." <u>BMC Health Services Research</u> 11.</p> <p>Canada</p>	<p>Social constructivist approach. Narratives used to show use of tacit knowledge and integration of tacit and explicit knowledge.</p> <p>Refers to conceptual approaches for KT in public health but concludes "strategies that recognize and support the use of tacit knowledge, such as communities of practice or networks, may be important components of a comprehensive approach to KT".</p>	<p>Not a literature review; focus is on KT strategy.</p>
<p>Landry, R. j., N. Amara, et al. (2006). "The knowledge-value chain: A conceptual framework for knowledge translation in health." <u>Bulletin of the World Health Organization</u> 84(8): 597-602.</p> <p>Canada</p>	<p>Good for definitions of KT; describes complementary processes of knowledge sharing (between individuals) and KT (between organisations).</p> <p>Identifies that there is no consensus re. the critical capabilities required to manage knowledge productively.</p> <p>Develops a non-linear knowledge-value chain model for public health agencies, linking five capabilities: knowledge mapping and acquisition; knowledge creation and destruction; knowledge integration and sharing/transfer; knowledge replication and protection.</p> <p>May be trade-offs depending on circumstances.</p>	<p>Not a literature review</p>



<p>Lapaige, V. R. (2010). ""Integrated knowledge translation" for globally oriented public health practitioners and scientists: Framing together a sustainable transfrontier knowledge translation vision." <u>Journal Of Multidisciplinary Healthcare</u> <b>3</b>: 33-47.</p> <p>Canada</p>	<p>Includes detailed notes about terminology, and also detailed table showing similarities/differences between KT and integrated KT.</p> <p>Presents newer concept of 'integrated knowledge translation' - both a process and a result - "a dynamic leadership coalition between practitioners and researchers" p.34.</p> <p>Also known as T2 research, collaborative research, co-production of knowledge, etc.</p> <p>Includes diagram of integrated knowledge translation conceptual framework.</p>	<p>Not a literature review; globalises KT concept beyond scope of study.</p>
<p>Strauss, S. E., J. M. Tetroe, et al. (2011). "Knowledge translation is the use of knowledge in health care decision making." <u>Journal of clinical epidemiology</u> <b>64</b>(1): 6-10.</p> <p>Canada</p>	<p>Refers to conceptual framework found in: Graham ID, Tetroe JM, Gagnon M (2009). <u>Lost in translation: just lost or beginning to find our way?</u> <u>Annals of Emergency Medicine</u>, Aug;54(2): 313-4.</p> <p>Framework adopted by the CIHR as the accepted model for promoting the application of research and a framework for the process of KT.</p> <p>Illustrates this knowledge-to-action framework: a model for the practice of KT. Notes "it is essential that end-users of the knowledge are included in the entire process to ensure that the knowledge and its subsequent implementation are relevant to their needs." P.8.</p> <p>Discussion of terms.</p>	<p>Not a literature review.</p>

## Appendix D: Knowledge transfer/exchange/translation exemplars

### KNOWLEDGE TRANSFER

#### *Dissemination of research findings*

I would say that also some of these seminars [Fuse quarterly research meetings] that – you know, within the five universities, that have been arranged – they’re about knowledge transfer. Or possibly about knowledge exchange. But it’s not knowledge translation. It’s kind of sharing academic knowledge with other academics, and possibly with a few other punters. (Participant Ac2)

I think there have been examples where it works. In the KEG conference, for example, that Fuse organised. Some of the quarterly research meetings that Fuse organise. But I don’t see very much exchange going on in those meetings. Quite often you’ll have a researcher or an academic presenting and people absorbing. (Participant Ac13)

Because it [the funding] has actually come from a PCT, there’s been quite a... What I would class as a lot of translation, because they wanted me to report back with regards to my findings. But what I’ve found is since I’ve done one report, as such, that would go to the commissioners. And then they’ve had to reword and rework it to then go out to clinicians – because, obviously, some of what I’d written into the first report, again, language-wise, it needed to be written different so they could actually hit the ground running and so something with it, as opposed to it just being something that would be shelved or shredded or... Whatever else they do with it. So I suppose there has been a different element with that, but that’s because of where the money has come from. And it’s something that I’m aware of, and it will continue through, right to the end of my PhD, to various different audiences. (Participant St7)

I was funded from some NHS money [...] But that was very, very much – ‘This research is all about trying to change and improve practice’. So whilst, you know... I had to keep remembering that the, you know, the analysis that I did had to be presentable. And the final reports, we actually made multiple versions for different audiences so that we could say, you know, you there – here’s the scientific version. Here’s the version for, kind of, senior clinicians. Here’s the version for parents. And then we also presented it at a conference where there were parents there as well. (Participant St12)

The surgeon that I’ve been working with at [name of hospital] has already asked me to present the findings of what I’ve got, already, to him and his... The [name] group within the hospital. It hasn’t actually happened yet but he’s determined that it is going to happen. So I’m sure that will happen at some point. So it is going to be fed back, whatever I’ve found, for them to improve their information materials that they give to patients. [...] I had a lot of interest when I was at... A couple of conferences that I’ve been to where other people from

other centres have spoken to me and said, “Can you give me what you've got so far because we're looking to do some new materials?” And this, that and the other. (Participant St6)

I think that if you take the seminar that we ran last summer, that was... That was on public health. Now that was, the kind of first step of that was about knowledge transfer. Because there we were, a group of people who had... Who were either academics or in practice. We had done some research and we'd been involved in some practice development and we shared that knowledge with the public. Now, the interesting thing about that seminar is that has now generated some further work, which I'm hoping... [...] What I'm hoping is that from that we might very slowly start developing a model of knowledge translation because of the people who are involved. (Participant Ac2)

I mean, what I'm thinking of is I presented stuff to various audiences. I've published in different journals. I've, you know, gone to conferences which weren't necessarily on... You know, to do with health. But I've talked about, say, for example, the science of homeopathic medicine and, you know, talked to historians of science, even though I'm a sociologist, kind of thing. About this particular thing. So I've done it [knowledge transfer] in those ways. (Participant Ac3)

It [the research project] was about the risk of congenital abnormalities in women with diabetes. And we worked with Diabetes UK for them to deliver the press release so that they could deliver, hopefully – although, of course, the media is a difficult beast to play with – but hopefully a message that was more positive about women improving their glucose control during pregnancy in order to reduce these problems. Rather than ‘Diabetic women have deformed babies’ and so on. To what degree it worked, I don't know. To what degree it really translated, to what degree those important messages actually got through to, kind of, the people that really matter. I mean, you hope that there are members of the population, maybe, who were thinking of getting pregnant and who read... You know, ‘Go to this site and this will help you to manage your glucose’. Or that there were GPs that thought, “Oh, I know somebody who's diabetic and is thinking of having a baby, I need to be telling them to do this kind of thing.” But I suppose, how do you know when something has translated. (Participant St12)

### ***Use of online resources***

Another [example], possibly, is the Centre for Enabling Health Improvement, which is a blogging weblog. Which actually originated in Gateshead but currently it's working across Sunderland and South Tyneside, although that might be changing. And that's about exchange of information and knowledge and, for example, lots and lots of documents are put on that site. You know, the Director of Public Health annual reports, the health needs assessment, that kind of thing. But it's an interactive site where people... It doesn't matter where you work within our community, you can become a blogger on the site. And it's about exchanging information on that site. [...] People are allowed to put information on there. It's not just static, like a website. (Participant Pr3)

So [name of colleague] is working, for example, with a bunch of health trainer champions. So they're... They're checking it [the website] as we go through. And, alright, it's one small group of people but they are, kind of, representative of that bunch of people. So they've gone, "Oh well, actually, that's quite useful. That's not useful. You need to do that in a different way." So we've kind of adopted those sorts of principles throughout it. (Participant Ac10)

## KNOWLEDGE EXCHANGE

### *Partnership working between academia and practice*

We've got a good working relationship with some of the local universities in [name of city]. Taking on... Taking on students there, that's a positive step. And we're in discussions with people about the possibility of putting together a research project connected to some of our work. And that's all good and positive. And we're... There's an initiative called [name of national initiative] and we're... We've got a kind of developing partnership with some of the people, some of the people in the University who are connected with that. So there's massive parallels between that and our work. And it seems likely that by working in partnership, connecting it to this initiative, that... We're ultimately... We're working towards the same objective. So it's likely that that will help us demonstrate our impact and also help... We will be able to help them and they'll be able to help us, and so on. So it all seems good. (Participant Pr1)

There's a couple of things, which I probably haven't thought of them as being that [knowledge exchange] but could be. There's a project I'm involved in called Common Knowledge, which is about arts in health and that's... We're doing work with Durham University Centre for Medical Humanities. And we... the Common Knowledge is about coming together in your area to... To sort of come up with projects and sharing of knowledge around setting up projects around arts and wellbeing in the community. But that's working with the University of Durham around that. And we actually link up with other Common Knowledges in other areas to share and exchange ideas of how things have worked in other areas. (Participant Pr3)

We used a sort of theory of change model to work alongside the people who were delivering the [name of] programme in practice, to develop our evaluation and, sort of, the directions that our evaluation should go in. So it was sort of a very much a two-way street. So that was more of a... A knowledge exchange kind of thing that we did with them. It didn't always work out brilliantly – there were lots of hiccups along the way. But I think that's sort of practical example of how we... We sort of sat in their meetings from the very inception of the programme [...] So we would go out in to the [research sites] and then we'd feed back to them constantly. So there was this constant – them telling us what they wanted, us kind of going and doing it. Telling them what we'd found. Them mulling it over and thinking, "Oh, well, actually, we'd like to know about this based on that." [...] So I think

that's my practical example of working with people and not just going, "Oh well, we know best because we're from the University". (Participant St1)

We spent a lot of time with... In the particular evaluations, going back and forth to the commissioners and saying, "What do you actually want this to show?" Not what do you want the end result to be, but what is it that you're going to use this for?" Those kinds of questions. And it took us ages, didn't it? To get to that point of – actually what you want is... And that's what you need... Is that what you need it for? (Participant Ac10)

### ***Co-location within practice settings***

So we were brought in as academic researchers but with a practice background. And we were put into a service – lock, stock and barrel. Not based in a University but actually based within the service to do the work on the evaluations. And I think that that was quite deliberate in order to use that interpretive, conduit – whatever style you want to call it. Because, eventually, the people we were working with realised that we were just the same as them, but we were working on the evaluation and they were doing the practice. And it actually made no difference, I don't think, in the end. We went native, I suppose, is the terminology. (Participant Ac10)

We're starting to take on students as volunteers as part of... on placements. So that they can then, they can gain some practical experience of what happens. What happens on a, kind of, grassroots basis, to inform their education. But then at the same time, what they're... They're then in a position to both contribute to what we're doing in terms of physically getting involved in some of what we're doing, but also... And also to help, if you like, pass some of that current training into our work, so that we... To help us just remain informed. That's all good. (Participant Pr1)

## **KNOWLEDGE TRANSLATION**

### ***Sense-making through collaboration***

I can think of a really lovely example of a research project that was done by practitioners in a voluntary and community sector organisation in Newcastle who did research – they would call it research on child poverty with large numbers of children and young people between 5 and 18. And they did... They built the research project with young people. And the young people that they spoke to early on said, "We're not poor. Don't ask us what poverty means because we're not it." So, actually, they reframed the whole way that they did the research, and asked questions about what poverty looks like in the north east. And they used photography as a means to get young people to record their experiences of poverty. And what came back was very clearly young people living in poverty. There was damp housing, there was empty fridges, there was... You know, very poor quality housing. A

whole load of stuff came back, which demonstrated that, actually, some of those young people, even though they said they weren't poor, were really obviously poor. They wouldn't have got any of that really lovely, rich data had they not generated it with the research participants in a way that produced it. (Participant Ac14)

One of the things that we are about to do at the moment is to set up a steering group for one of our major projects. And then the... And our plan with that is to bring together a combination of GPs, some of our staff, and some of our volunteers – many of whom will be ex-service users – and health-related, health academics. So that, as a steering group, they will help inform... They will help inform the development of the project but also to be critical about the evaluation. So they'll meet quarterly and look at the evaluation of the project as it goes on, which will then help inform the development and change of our project as it takes place. (Participant Pr1)

[The study] was only, like, quite small scale, but I actually spoke to the teachers to help develop the intervention. So I was aware that it wasn't me doing it. I had to rely on them to do the teaching – I couldn't do it. So I really used and really worked with them to try and create something that would be suitable for them, as opposed to me just saying, "I think this would work." And trying to share the knowledge and make me be aware of their needs, and try and incorporate that into the study, as opposed to people just going in and saying, "Do this, please. Do it. Thanks." Leave. (Participant St3)

I actually rang up the local PCT and said, "I've got a bit of capacity, is there any burning questions that you would be interested in me looking at?" And they went, "Whoa, we've never had an academic ever ring us up and ask us that question". And I said, "Well, you know that I used to be in practice – I know a lot of people in Sunderland anyway. I used to work there. So, for me, when I was in practice, I would have loved an academic to come to me and say that we've got a bit of time – is there anything that I'd really... You'd really want to be investigated? Because I would have had a list as long as my arm of things I would have liked to have done in practice but we'd never had the time to do it." So through that we were able to talk about what were the burning issues for them and came up with, you know, a very small research project. But actually it's looking at the things that they wanted to be looked at but don't have the time – and sometimes the skills – to be able to do it. (Participant Ac4)

### ***Applying and utilising knowledge***

When I used to manage the community development work for mental health, some of the stuff that we were using was driven around the Government. But there was research that was done by Durham University. And the... One of the researchers actually came to see the community development workers – the regional ones – and did a presentation on the findings. And most of us, actually, ended up using those findings to actually influence what we were doing. Like the statistics of ethnic minorities getting sectioned in comparison to the general white population and things like that. You know, we ended up taking most of that material to actually influence or raise awareness within the mental health services. So it worked very well then, in that regard. (Participant Pr2)

My experience of doing a CASE [Collaborative Awards in Science and Engineering] studentship was really positive. And actually the findings were disseminated through networks of practitioners. And there were national guidelines produced by a well known young people's sexual health charity that were then disseminated nationally. And they continue to be used. And we're going to a review of the service at the moment that is building in some of the findings from the research. (Participant Ac13)

One example of [knowledge translation] is the national NHS health trainer scheme. [...] There were a number of different organisations who were running initiatives which were broadly... Which were similar, broadly similar prior to that – our community health educators project being one of them. And our project was one of the pieces of work that helped inform the national health trainers project. And I think it's, through the, kind of... That kind of partnership approach that I was discussing, we've got the opportunity to then... To continue to innovate and come up with new ideas and work differently and demonstrate that that kind of work really works. (Participant Pr1)

I mean, I know I've got my intervention. And then, following the focus groups I know some of the teachers have taken it on board off their own back and are doing it now. I'm not telling them to do it. But that's just the teachers doing it. So I suppose, in a small sense, [the PhD study] has made an impact and they've taken it on board. And, yeah, okay, it might only be two teachers, but two out of five or however many teachers it was, to me, is good. (Participant St3)



## Appendix E: Maps of the properties of core terms as described by different stakeholder groups

These ‘maps’ were developed specifically from the responses given when participants were asked to define the three core concepts, and do not take into account the ‘real’ examples collected. This is done to contrast and thus highlight subtle differences in interpretation of the terms and the language used to define them, and also raises the issue of difficulties in finding appropriate language to articulate meanings and interpretations related to the terms.

Map of properties described by stakeholder group: KNOWLEDGE TRANSFER			
	Practitioners	Students	Academics
<b>Broad ethos and broadly what is it</b>	Movement of information, knowledge and experience	Movement of knowledge or information	Movement of knowledge which may also include application or impact Also, movement of people? E.g. putting graduates into industry
<b>When it happens</b>	When it might happen: continually	Dissemination- for example by publication	Dissemination
<b>Who is involved</b>	Experts, academics, staff[practitioners/community health workers]		Wide range of organisations and people: Academic organisations, practitioners, students, industry, communities, populations
<b>Direction of movement</b>	Two way between practitioners and academics, and community participants	One way	Uni-directional from academia (research) to practice or teacher to student
<b>What is Moved</b>	Experiences and understanding, research information	Knowledge or information (e.g. via publication)	Research findings, research knowledge
<b>Power issues and Participation</b>	Implied equality?	Takes place on the same level between groups who understand ‘it’ [the format or language in which the knowledge is presented]	Strong feeling that the power lies with the academic institutions and the academics or researchers. Some suggest this is not how it should be.

Map of properties described by stakeholder group: KNOWLEDGE EXCHANGE			
	Practitioners	Students	Academics
<b>Broad ethos and broadly what is it</b>	Two way exchange which involves helping others understand needs and information	Sharing, exchanging , sometimes involving working together	Working together, sharing and building, two-way process of exchanging. Some see it as only one part of another larger process.
<b>What the process is</b>			<i>Some see the process as:</i> first jointly developing agreed and shared understandings of what is wanted, building up a research question and seeking an answer, embedding that in practice. <i>Others:</i> a process which renders knowledge more transportable but without making major modifications to any aspect of the knowledge.
<b>When it happens</b>	At meetings where different groups come together to discuss topics of shared interest (e.g. team meetings or networks)	At various stages of the research and when researchers work together.	At various stages of the research, e.g. talking to communities and commissioners during projects, or to other academics in dissemination
<b>Who is involved</b>	Academics, practitioners and anyone who would use research findings	Researchers, academics and 'normal people' or 'lay people'	The 'academic research world' and the 'applied worlds' such as clinical services and practice. Exchange between two partners -individuals or institutions.
<b>Direction of exchange</b>	Two uni-directional elements which come together to form an exchange	Some see it as a two-way process of sharing or exchanging. It is also referred to in uni-directional terms such as 'gaining' or 'feeding back'.	Two-way, building knowledge together
<b>What is shared</b>	Information and knowledge: academic or research related and/or practitioner / practice related	Knowledge, information, practice knowledge, ways of doing, methods and experience.	Knowledge, skills, experience, expertise, evidence, and research understanding about what works and what makes a difference.
<b>Power issues and Participation</b>	Implied equality	Some see knowledge exchange as a process happening between people at the same level, Others view it as a cross-level process.	<i>Some see those involved as:</i> equal partners in a process <i>Others see it as:</i> passive and not participatory
<b>Views of knowledge</b>	A shared resource?	A commodity? (You give something, they give something back?)	<i>Some:</i> highlight knowledge and skills and expertise, outside of academia - understanding and experience to draw on in the world of practitioners and vice versa. <i>Some see knowledge exchange as a process which:</i> can only take place between those who have the same level of knowledge or are at the same level of understanding

<b>Map of properties described by stakeholder group: KNOWLEDGE TRANSLATION</b>			
	<b>Practitioners</b>	<b>Students</b>	<b>Academics</b>
<b>Broadly what is it</b>	Largely uni-directional process involving academics making information and research findings understandable and applicable to practitioners. But also includes conversations between groups and movement across groups other than academia.	Largely uni-directional process involving academics making research and research findings meaningful, understandable and applicable to other groups – predominantly practitioners or policy makers	Multidimensional process which can include some or all of the following:
<b>What the process is</b>	<p>Collecting, synthesising and making understandable;</p> <p>Sharing and understanding Making it understandable and passing on knowledge in an understandable way Interpreting, 'translating to practitioners' - that conversation, or that exchange of information, with academics Dissemination to practitioners: Reporting and utilising or applying</p> <p>Example of training as a way of sharing knowledge and translating knowledge.</p>	<p>Meaning and sense making; Seeking agreement on understandings Producing something meaningful to a different audience, Making it [research findings] meaningful, change it to make it useful, changing, translating language to make it understood Explaining, using practical example, sense making, using language that others can understand, Moving and applying knowledge,; Getting findings into practice, out there Crossing 'worlds': coming from the academic sphere to the real life sphere, Make something theoretical applied Dissemination: Get messages out, presenting in a way which is easier to translate</p>	<p>Knowledge generation Knowledge movement :Collecting, exchanging, sharing and or providing knowledge or information Bridge building Sense making, Making information or knowledge understandable, meaningful, through a process of Changing the language, listening to meaning as well as telling, interpreting with a purpose, synthesising, Adapting knowledge for another environment, making it 'fit' for need or purpose, tailoring to fit a number of needs, transforming Applying knowledge to a specific field of practice Some see the process as: To make a change or whatever. Conversely some see it as : Not necessarily leading to action</p>
<b>Who is involved</b>	Practitioners, researchers academics	Policy makers, funders/commissioners, practitioners, researchers academics	'Other people', groups: Academics, students, clients, patients, practitioners, commissioners, funders
<b>Direction</b>	Predominantly but not exclusively, uni-directional. (Also some discussion of conversations across groups) Academia into practice	Uni-directional Academia into practice	Multi directional/dimensional
<b>What is shared changed or interpreted</b>	Predominantly (but not exclusively) Information from universities, research findings. Interpreting and sharing knowledge (training) within practice?	Research findings	knowledge or information, experiences
<b>Power and Participation</b>	Sharing implies involvement and equality?	Academics/researchers are responsible for generating knowledge, others are relatively passive recipients	Taking the other into account, listening as well as telling

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